

THE UNIVERSITY OF TEXAS AT AUSTIN

Date: 09/04/2014**RECOMMENDATION FOR CHANGE IN ACADEMIC RANK/STATUS**Name: El Mohtar, Chadi S. EID: cm34663 Present Rank: Assistant ProfessorYears of Academic Service *(Include AY 2014-15 in each count)*:At UT Austin since: 09/01/2008 In Present Rank: 7.00 In Probationary Status (TT only): 6
(month/day/year) (# of years) (# of full years)Primary Department: Civil, Architectural, and Environmental Engineering College/School: Cockrell School of EngineeringJoint Department: - College/School: -Other Department(s): -Recommendation actions¹:By Budget Council/Executive Committee: PromoteVote² for promotion 24; Against 0; Abstain 1; Absent 2; Ineligible to vote 0By Department Chair: PromoteBy College/School Advisory Committee: PromoteVote for promotion 6; Against 1; Abstain 0; Absent 0By Dean: PromoteAdministrative Action: Promote to Associate ProfessorDate Action Effective: September 1, 2015

(To be submitted to the Board of Regents as part of the annual budget.)

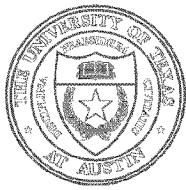
By: 

For the President

Date: December 17, 2014¹See "Chart of Recommended Actions" for eligible recommended actions applicable to specific conditions and administrative levels.²Record all votes for and against promotion, abstentions by eligible voting members, and the number of absent eligible voting members. The number of budget council/executive committee members ineligible to vote due to rank should also be recorded. Enter zero where it would otherwise be blank.

EVPP/10.14

EXHIBIT**P's 169**



THE UNIVERSITY OF TEXAS AT AUSTIN
COCKRELL SCHOOL OF ENGINEERING

Office of the Dean • 301 E. Dean Keeton Street, C 2100 • Austin, Texas 78712-2100

Dean's Assessment

Chadi S. El Mohtar

Department of Civil, Architectural and Environmental Engineering

Dr. Chadi El Mohtar received his BS degree in civil engineering from Beirut Arab University in 2001, his MS degree in civil engineering from Michigan State University in 2003, and his PhD degree in civil engineering from Purdue University in 2008. Dr. El Mohtar joined the faculty in the Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin in September 2008. If successfully promoted to associate professor in September 2015, Dr. El Mohtar will have served in probationary status for six years, and in the rank of assistant professor for seven years.

Ten external references were submitted as part of the promotion dossier, five were chosen by the candidate and five were chosen by the budget council. The letter writers comprise faculty from nine universities in the US, including UC Davis, Texas A&M, Georgia Tech, Washington, Michigan, and Cornell. Two are members of the National Academy of Engineering. The final external referee is a faculty member from Europe and he is a foreign associate of the National Academy of Engineering.

Teaching

Dr. El Mohtar taught three different courses (total of 16 classes) while in rank. This includes two undergraduate courses (CE 357, *Geotechnical Engineering* [nine times], and CE 375, *Earth Slopes and Retaining Structures* [two times]) and one graduate course (CE 387L.1, *Consolidation and Shearing Properties of Soils* [five times]). CE 357 is a required course for all undergraduates in civil and architectural engineering, CE 375 is a senior-level elective, and CE 387L.1 is a required course for all graduate students in the geotechnical engineering program.

At the undergraduate level, Dr. El Mohtar's average instructor rating is 4.2 and his average course rating is 3.9, which is comparable with the average ratings in the department (4.07) and school (4.01). His instructor ratings in undergraduate courses indicate low scores in the first semester that he teaches a course (3.4 in CE 357 and 3.8 in CE 375) and a significant improvement in the subsequent offerings. For instance, in CE 357, Dr. El Mohtar's instructor ratings have been above 4.0 every other semester.

At the graduate level, Dr. El Mohtar's average instructor rating is 3.6 and his average course rating is 3.5. These ratings are considerably below the average ratings for the department (4.09) and school (4.19). However, his ratings have improved with time in this course also (increasing from 3.2 to 3.9). The department chair and the budget council statements discuss in detail the issue relating to Dr. El Mohtar's performance in the graduate class. In short, the geotechnical engineering group decided to merge two graduate courses into one, and Dr. El Mohtar was tasked with teaching it. In addition to merging the course content, he introduced modern laboratory experiments into the course. The students believe that too much material is covered in the course and the lab component introduces logistical and work load problems.

The peer evaluations and student comments indicate that Dr. El Mohtar is an effective, organized teacher who cares about the classes he teaches and spends considerable time preparing for the classes. A number of peer evaluations indicate that Dr. El Mohtar incorporates some novel techniques, such as the use of music and innovative flash cards to increase the participation of the students. The undergraduate evaluations during the first instance of teaching pointed to deficiencies symptomatic of lack of experience, but subsequent evaluations broadly reflect an incorporation of feedback and improvement.

Dr. El Mohtar's teaching statement indicates that he takes the student and peer evaluation feedback very seriously to improve and revise the course structure. Consistently with such an approach, Dr. El Mohtar has actively sought training opportunities to improve his teaching skills. For instance, he attended the six-day American Society of Civil Engineers (ASCE) Excellence in Civil Engineering Education (ExCEED) teaching workshop and he sought the advice of experts from the Center for Teaching and Learning.

Research

Dr. El Mohtar's research is in the area of geotechnical engineering and deals with modifying in-place soils to improve their behavior during extreme loading from natural sources (such as earthquakes, hurricanes, and floods) and loads from the built environment. His research aims to engineer pore fluids and soils to enhance resilience under adverse or extreme loading conditions. As a means to this, Dr. El Mohtar has experimentally studied the fundamental aspects of viscous flow in porous media by relating rheological properties of the fluids and suspensions to the mechanical and hydraulic characteristics of soil.

Dr. El Mohtar has published 14 refereed archival journal papers in rank (including one in press, 15 career total). Four of these papers are based on his research as a PhD student at Purdue and one is based on his research as an MS student at Michigan State. However, all were written while Dr. El Mohtar served on the faculty at UT. Of the nine papers that are based on research conducted at UT, Dr. El Mohtar's sole-supervised PhD student is a co-author on six, his co-supervised PhD student is a co-author on two, and an MS student is a co-author on one¹. The papers have appeared in high-quality journals, such as *ASTM Geotechnical Testing Journal*, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, *Clay and Clay Minerals*, and *British Geotechnique Journal*. Dr. El Mohtar has also published eight refereed conference papers (twelve career total).

While on the faculty, Dr. El Mohtar has secured a total of \$1.7 million in research funding (his share is almost \$1.1 million). Although 14 grants and contracts are listed on Dr. El Mohtar's CV, his funded research can be divided into six categories: (1) containment of non-aqueous phase liquid (funded by the Texas Hazardous Waste Research Center with additional funding from consulting engineering firms), (2) performance of drilled shaft retaining walls (funded by the Texas Department of Transportation with additional funding from consulting engineering firms), (3) liquefaction hazard evaluation (funded by the National Science Foundation), (4) balancing rheology and filtration (funded by the National Science Foundation – CAREER Award), (5) investigation of the interaction between drilling fluids and well formation (funded by a joint industry project through the Center for Petroleum and Geosystems Engineering), and (6) laboratory testing (funded by industry service contracts). The majority of Dr. El Mohtar's funding is from federal sources (NSF provided over \$1 million of the \$1.7 million), he has also secured funding from the state and industry. Dr. El Mohtar has collaborated with a number of senior researchers on these projects, but his expertise related to laboratory testing of soils is clearly identifiable.

The external letters are strong, and address in great detail the significance of Dr. El Mohtar's research.

Dr. Thomas O'Rourke (Cornell, NAE) writes "His work in this area has established him as one of the leading researchers in this field. His research findings are stimulating additional investigations for field implementation of liquefaction remediation. I think that Dr. El Mohtar's development to date is consistent with the highest quality academics in his cohort at research-intensive universities. He shows substantial promise for professional growth and leadership. Based on my knowledge of his work and my review of the materials sent to me, I recommend him strongly for advancement to tenure and Associate Professor."

Dr. Edward Kavazanjian (Arizona State, NAE) writes, "In summary, I believe Dr. Chadi El Mohtar has established himself as one of the leading young investigators among his colleagues at US Universities. He

¹ The budget council statement refers to seven papers that were developed on topics distinct from Dr. El Mohtar's PhD research.

has an excellent record of scholarly publications that have made significant contributions to the field. I have no reason to believe he will not continue to grow professionally, assume a leadership position in the geotechnical field, and make additional contributions to the field.”

Dr. Roman Hryciw (Michigan) writes, “Professor El Mohtar has provided our profession with excellent experimental data and analytical explanations for the permeation of soils with bentonite suspensions. I would consider him a leading expert in this area today. I will conclude my assessment with a strong endorsement of tenure and promotion for Dr. Chadi El Mohtar to rank of Associate Professor at the University of Texas.”

Dr. Susan Burns (Georgia Tech) states, “Dr. El Mohtar's work on the engineering behavior and rheology of bentonite has been remarkably thoughtful and forward thinking, with emphasis on the fundamental, dynamic behavior of bentonite suspensions, modified with polymers and surfactants. Thus Dr. El Mohtar has established an active research group, and has a record of publishing his work in the highest quality research journals in our field. His rate of publication has been especially impressive given the inherent difficulty in establishing such meticulously detailed experimental work.”

A few of the letter writers did identify concerns with the case. Dr. Kavazanjian (Arizona State, NAE) noted that Dr. El Mohtar's CAREER award “appears to be the only substantial sponsored project (i.e. project in excess of \$100,000) on which he is the lead investigator.” Dr. John Germaine (MIT) commented that “Chadi is a bit behind on publications, but the rate has picked up in the last two years to a typical pace.” And Dr. Jean-Louis Briaud (Texas A&M) stated that “His number of graduated PhD students is a bit low with one PhD student graduated although it is a very productive student.”

In spite of these reservations, all external reviewers indicated that Dr. El Mohtar exhibited great promise for further professional growth and leadership.

Advising and Student Mentoring

Dr. El Mohtar has graduated two PhD students (one co-supervised) and seven MS students (one co-supervised). He is currently supervising three PhD students and one MS student (co-supervised). He has advised and mentored 15 undergraduate students in research, ten from UT and five as summer interns from other universities. Four of these undergraduate students have pursued graduate degrees.

Dr. El Mohtar also serves as the faculty advisor to the graduate student chapter of the ASCE Geo-Institute and he has served for the past two years as the graduate admissions coordinator for the geotechnical engineering group. In the latter role, he processes approximately 100 applications each year, coordinates recruiting visits, advises and mentors new students, and advises all MS students who pursue a coursework-only degree.

University Service

Dr. El Mohtar has served on several committees within the department, including the Curriculum Committee, ABET Review Committee, and Graduate Curricula and Policies Committee. He has also served on a faculty search committee for a position in geotechnical engineering and as graduate admissions coordinator for the geotechnical engineering area.

Professional Service

Dr. El Mohtar has been active in technical committees within the American Society for Testing and Materials (ASTM) and ASCE. He has served as an officer of two ASTM committees or work groups. He has organized sessions at two conferences and participates on three technical committees.

Other Evidence of Merit or Recognition

Dr. El Mohtar has received two major awards while in rank: (1) an NSF CAREER award in 2012 and (2) the Arthur Casagrande Professional Development Award from the Geo-Institute of ASCE in 2014. The Casagrande Award recognizes a young professional (35 years of age or younger) who is an outstanding practitioner, researcher, or teacher of geotechnical engineering in the U.S. His students also received a Best Student Paper Award at the 7th International Conference on Remediation of Contaminated Sediments.

Overall Assessment

Dr. El Mohtar experienced a slow start at UT. He is an experimentalist and it took a while for him to establish his laboratory, secure research funding, and publish papers related to his independent work. However, his productivity has increased dramatically in the past three years and he has a sound vision for his future research. He also experienced some start-up problems in the classroom, but has demonstrated a commitment to undergraduate teaching, and is making progress in his graduate course. He has a solid record of graduate student supervisions, and has been active in service activities within the university and within professional organizations. He has been recognized with two noteworthy awards.

I am quite familiar with this case, because I served as the department chair in civil, architectural and environmental engineering when Dr. El Mohtar joined the faculty. I met with him frequently during his probationary period, and also met with his mentors, to monitor his progress.

The promotion and tenure committee supported promotion of Dr. El Mohtar, but the case generated considerable discussion. The one negative voter indicated that this case was very similar to another considered this year, and decided to vote the same way on both. I agree that there are many similarities between the two cases, but there are also some significant differences: (1) Dr. El Mohtar was hired because of his interest and expertise conducting laboratory experiments. None of the other faculty members in the group work in this area. Therefore, he had to rebuild the soils testing labs from scratch and he could not rely on experienced graduate students or technical staff within the group. He introduced state-of-the-art testing for research and teaching, and he trained a new staff member during his first two years on the faculty. (2) Dr. El Mohtar collaborated with a number of senior faculty members within the geotechnical engineering group, but his areas of expertise complemented those of his colleagues, and his contributions to the projects are distinct. (3) Dr. El Mohtar has received two significant external awards.

Accordingly, I believe that Dr. El Mohtar meets expectations for promotion to associate professor and recommend promotion.



Sharon L. Wood, Dean
16 November 2014

Department of Civil, Architectural and Environmental Engineering
Statement by Department Chair

Candidate: **Chadi El Mohtar**

Chadi El Mohtar joined the faculty of the Department of Civil, Architectural and Environmental Engineering (CAEE) in September 2008 and has been in rank as assistant professor for seven years. His general area of expertise is geotechnical engineering, with a focus on prevention of liquefaction of soil (loss of soil strength so that it acts like a liquid).

Assessment Methodology

This assessment is based on a detailed analysis of (1) candidate curriculum vitae and statements, (2) Budget Council statements, (3) letters from external reviewers, (4) CIS evaluations for all courses taught in rank, (5) written student comments for courses taught in rank, (6) peer teaching evaluations completed during current academic rank, (7) publications and citations, and (8) Budget Council discussions and vote on whether the candidate should be promoted.

All members of the CAEE Budget Council had an opportunity to review candidate statements, Budget Council statements, and letters by external reviewers prior to the Budget Council meeting on promotions held on 25 August 2014. For each promotion case a Budget Council member made a formal presentation to summarize the candidate's performance in teaching, research, service, and advising, as well as honors received and letters by external reviewers. An open discussion then took place until a vote by secret ballot was called. Members of the Budget Council evaluated promotion candidates in terms of whether their overall performance merits promotion (Yes, No, Abstain).

A summary of the Budget Council discussion and vote is provided below, along with the Chair's assessment of Chadi's performance in teaching, research, academic advising, administrative and committee service (at UT and in profession), as well as honors and recognition. A summary and Chair's recommendation on the promotion case is then presented.

Budget Council Discussion and Vote

The Budget Council vote was strongly in support of Chadi's promotion to associate professor (Overall recommendation: **24 Yes, 0 No, 1 Abstain**).

The discussion regarding Chadi's case covered several issues. One Budget Council member asked about Chadi's below average performance in the graduate course CE 387L. It was noted that Chadi has put significant effort into development of this course, including a completely different set of laboratories than had previously been taught in the two parent courses that Chadi merged to form CE387L. Chadi has made considerable effort to improve this course, and has steadily improved his instructor and course ratings.

There was some discussion of Chadi's record of scholarly publications and research sponsorship continuing to improve with time, and that he is on a very positive trajectory. There is a sentiment that Chadi commits with passion to everything he does, including extensive service to the Geotechnical Engineering group. Many others benefit from Chadi's efforts, perhaps much more than should be expected of an assistant professor.

There was agreement that Chadi is working in a very good area for continued research sponsorship, is making a name for himself in his field, and should have a very good future. One senior Budget Council

member, who is outside of Chadi's area, noted how impressed he has been with Chadi's professionalism, citing development of a relationship with Burlington Northern Santa Fe Railway Company (BNSF).

Since the vote on each promotion case was by secret ballot, there is no way of definitively knowing why one Budget Council member voted to abstain. However, on the specific ballot for which "abstain" was checked, a note was scribbled next to the question of whether academic advising, counseling, and other student services merit promotion. The note stated "only three current students," and the Budget Council member checked both "Yes" and "No" for this category. It would be no more than speculation to assume this to be the reason for an abstain vote. There is no other indication as to why one Budget Council member voted to abstain.

Teaching

Chadi has taught three different courses (2 undergraduate and 1 graduate) to 16 classes since joining the faculty of CAEE. Eleven of his 16 course offerings have been at the undergraduate level. He has taught a total of 535 students, 432 (81%) being undergraduate students. His average undergraduate class size has been 38 students. His average graduate class size has been 21 students.

One undergraduate course, CE357 – *Geotechnical Engineering*, serves as an introduction to the field of geotechnical engineering and is a required course in both the Civil Engineering and Architectural Engineering curricula. Chadi has taught this course on nine occasions with an average class size of 42 students. He has also taught an undergraduate elective course, CE375 – *Earth Slopes and Retaining Structures*, on two occasions with class sizes of 27 and 39 students. Chadi has taught his one graduate course, CE387L.1 – *Consolidation and Shearing Properties of Soils*, on five occasions. This is a required course for all graduate students in Geotechnical Engineering.

Chadi has a consistent record of struggling the first time that he teaches a course, with continuous improvement thereafter. His instructor (I) and course (C) ratings the first time he taught CE357 were 3.4 and 3.2, respectively. In the eight offerings of CE357 since, he has never had an instructor rating below 4.0, with peak values of 4.6 and 4.7, and course ratings of 4.0 or greater on five occasions. His ratings the first time he taught CE375 were 3.8 (I) and 3.9 (C), and they improved to 4.6 (I) and 4.3 (C) the second time he taught the course. His average instructor and course evaluations over all 11 undergraduate course offerings are 4.19 (I) and 3.93 (C). Despite the two poor starts, Chadi's average instructor rating in undergraduate courses is above both the CAEE and Cockrell School of Engineering (CSE) 5-year averages of 4.07 and 4.01, respectively, for assistant professors in undergraduate courses. If the first offering of each course is removed, his ratings improve to 4.32 (I) and 4.01 (C), very good ratings for an assistant professor relative to those amongst his peers in CAEE and CSE. Chadi has been evaluated twice by peers in CE357 and once in CE375. None of these evaluations occurred during the first offerings of these courses. Evaluators described Chadi as being engaging as a teacher, and students in his classroom as being attentive to his lecture. Student comments tend to bear this out. Many students have commented that Chadi cares and that they love his attitude. Some have made recommendations about Chadi needing to improve his handwriting, and that more examples are needed in lecture. Importantly, even when he taught CE357 the first time and received relatively poor ratings, the student comments reflect that Chadi worked hard, was organized, and cared about them. Much of the criticism was related to workload, too many homework assignments, and "needs teaching experience."

Chadi has been less successful teaching his graduate course. Over five offerings of CE387L.1, his average ratings have been 3.64 (I) and 3.50 (C). There has been relatively steady improvement from the first to last offerings of the course, yet his overall average and even his highest marks are considerably lower than the 5-year CAEE and CSE averages for assistant professors teaching graduate courses, i.e., 4.09 (I) and 4.19 (I), respectively. There are several possible reasons for his low ratings in this course.

First, Chadi took two previous graduate courses in Geotechnical Engineering and merged them into this single course. One peer evaluator, who did a much more detailed assessment of the course than a review of a single lecture, stated that too much material was being taught for a single course. This statement is reinforced by written comments made by students on evaluation forms. Some students have also stated that there is too much material covered in the course, and that the course should be two courses. Furthermore, Chadi independently developed a fairly intensive laboratory component for this course that requires a lot of organization because only a few students can complete the laboratory at a time; Chadi teaches each of these smaller groups in the lab. Students have commented about the difficulty of organizing times to complete the labs. Since this course is also required of all Geotechnical Engineering students, it is not necessarily a course that all of the graduate students actually want to complete.

Two faculty members completed peer evaluations of Chadi in CE387L.1. Both evaluators indicated that Chadi is energetic, enthusiastic, and seems to care about the students and subject matter. However, both also indicated that he could have improved with respect to engagement of the class, an issue that does not seem to be a problem in Chadi's undergraduate courses. One peer evaluator gave specific examples of where improved engagement might occur. The second mentioned that in the latter part of the lecture there was little engagement, and that students simply listened to Chadi lecture.

That Chadi has improved as a teacher in each of his courses is testimony to the fact that he cares about teaching. This is obvious to those who know Chadi, and who have spoken with him about his courses and students. In 2010, he attended an American Society of Civil Engineers six-day Excellence in Engineering Education (ExCEED) workshop to improve his teaching skills. He is also receptive to comments made by students and his evaluators about how he can improve as a teacher, and has acted on many of these. His teaching performance in undergraduate courses can be reasonably characterized as good to very good. His performance as a teacher in his graduate course can be reasonably considered as satisfactory following significant improvement over five offerings. It is unfortunate that Chadi took on such a challenge with the merger of two graduate courses and introduction of entirely new laboratories.

Research

In lay terms, Chadi's research deals with "ground improvement" by altering the physical properties of soil to assure resiliency of engineered systems (levees, tunnels, etc.). He is an experimentalist and does research in a laboratory setting. Much of his research focuses on how to infuse specific materials into the soil pore space to change the properties to an extent that prevents liquefaction. This problem has significant intellectual merit in that it combines knowledge of soil properties, fluid mechanics, and transient properties of the material added to the soil.

Chadi's research has expanded the knowledge base associated with the fundamentals of viscous flow through porous media by relating the rheological properties of fluids and suspensions to the mechanical and hydraulic characteristics of geo-materials. While much of his work has focused on ground improvement, e.g., to prevent liquefaction during earthquakes, he has expanded his research to include geo-environmental engineering problems such as mobilization of non-aqueous phase organic contaminants, and petroleum engineering problems associated with time and space variability during and following the injection of complex liquids into soil, e.g., for purposes of hydraulic fracturing.

Chadi has proven that he can develop an independent and productive research team. He has advised two Ph.D. students (one co-supervised with Professor Robert Gilbert) and seven M.S. students (1 co-supervised with Professor Robert Gilbert) to completion. He is sole-supervisor to two additional Ph.D. students, both of whom were recently admitted to candidacy, and one additional M.S. student (co-supervised with Professor Robert Gilbert). He has also advised and mentored 15 undergraduate students in research, 10 from UT and five as summer interns from elsewhere.

Chadi has supported his research team and efforts through 14 funded research projects on which he serves as PI or Co-PI. These projects total \$1.73 million, of which \$1.09 million is his share. Of these projects, Chadi has served as PI on eight grants and sole PI on six of those eight. Chadi's share of funding on just those grants for which he serves as PI is \$616 K. Approximately 2/3 of this amount is from Chadi's NSF CAREER award entitled *Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media*. The other 1/3 is primarily from industry, with several small grants of less than \$25,000 and one for \$150,000 related to interactions between drilling fluids and well formation. Chadi also serves as the UT PI (not overall project PI) on a multi-university NSF/NEES grant on liquefaction, with his share on that grant being \$167 K. If this is added to grants on which he serves as PI, his share would increase to over \$780K, with an even greater fraction being from competitive federal grants.

Chadi continues to actively seek research funding to support his main research focus, as well as for new applications related to his expertise. He currently serves as PI on three proposals (to the NSF, USGS, and Federal Railway Administration) and Co-PI on two others (both to TxDOT). His share of these proposals is \$677 K. Chadi has also teamed with another young professor in CAEE to develop a relationship with the BNSF Railway Company, traveling to meet with their officials and hosting representatives of BNSF at UT in an effort to secure funding for a railway/soil testing system. Discussions with BNSF are continuing. He has also recently teamed with Professor Mary Wheeler of ICES to develop a proposal to BP that would involve a sophisticated 3D modeling effort for stress management on depleted soft rock reservoirs, supported by Chadi's experimental research to determine the effects of changes in pore fluid on shear compaction failure at different stresses (changes in pore pressure).

Chadi has co-authored 15 publications (14 in print and one accepted and already published on-line) in peer-reviewed journals, most being highly-regarded journals in his field. This is a very good publication record for a young faculty member who does complex experimental work and who joined UT shortly after completing his Ph.D. This fact is underscored by an external reviewer (Susan Burns of Georgia Tech) and described later in this section. Of his 15 journal papers, 14 have been published while on the faculty of UT. Like most young faculty members who are experimentalists, it took Chadi some time to develop his laboratory facility and generate enough data of sufficient quantity and quality for publication. As such, 10 of his 14 journal articles while at UT have come in the past two years. Of his 15 journal papers, four are co-authored with his Ph.D. advisors (Bobet and Santagata), indicating that he has been able to develop an independent research program at UT. Eight of his journal papers have been published with his two Ph.D. students who have completed their degrees, six with the student for whom Chadi sole supervised. One additional paper has been co-authored with one of his M.S. students.

Chadi has also published 12 refereed conference papers (nine while at UT) with two more under review, a reasonable number for someone at his career stage in most civil engineering disciplines. He has also delivered nine invited presentations since joining the faculty of UT, including one at Purdue University and one at the University of Washington.

Chadi's collective publications have been cited 92 times (via *Publish or Perish*), a number that would be larger had the majority of his journal articles not been published since 2013. His h-index is 6, a satisfactory number for someone at this stage of his career in most civil engineering disciplines, but one that will improve as his current publications progress beyond one or two years in print. Perhaps a better indicator of the impact of more recent papers is the number of views they receive on-line, which can also be an indicator of likely future citations. Chadi's papers are receiving significant "views". For example, his 2013 paper entitled "Groutability of Granular Soils using Sodium Pyrophosphate Modified Bentonite Suspensions" in *Tunnelling and Underground Space Technology* had received 353 views as of April 2014.

Letters submitted by external reviewers address Chadi's growing stature in his field and the importance of his work:

Ross Boulanger (University of California, Davis)

"He is nationally well known and respected."

"I have absolutely no doubt that Dr. El Mohtar would be granted promotion to Associate Professor at my university based on his excellent record and its strength relative to others receiving such a promotion here and at other research intensive universities."

John Germaine (MIT)

"Given his technical expertise, stature in the community, quality and quantity of his publications, I believe he has great promise to be a leader in the geotechnical community."

Jean-Louis Briaud (Texas A&M University)

"To get tenure in the top 10 geotechnical programs in the country today I have no doubt that he would receive tenure at such institutions."

Susan Burns (Georgia Tech)

"Dr. El Mohtar has established a strong research presence in geotechnical and geoenvironmental engineering, and he has demonstrated the ability to expand traditional research scopes into new and unique areas."

"His rate of publication has been especially impressive given the inherent difficulty in establishing such meticulously detailed experimental work. He combines original thought with productivity and has developed research areas that will have long-term impact on our profession."

Jeffrey Evans (Bucknell University)

"I am currently under contract to produce a textbook on Ground Improvement Engineering and intend to incorporate Dr. El Mohtar's work in the chapter on grouting yet to be written."

Robert Holtz (University of Washington)

"I can say that Dr. El Mohtar progress thus far compares favorably to the resumes of many assistant professors who were ready to be promoted to associate that I have reviewed during the past 35-40 years."

Roman Hryciw (University of Michigan)

".... permeation of soils with bentonite suspensions. I would consider him a leading expert in this area today."

"Dr. El Mohtar is on par with his cohorts at top universities, particularly with his colleagues who are experimentalists."

Michele Jamiolkowski* (Politecnico Di Torino)

“The spectrum of Dr. El Mohtar research achievements is characterized by an innovative and multidisciplinary imprint”

“I consider him a talented scientist with excellent perspectives for further growth.”

Edward Kavazanjian* (Arizona State University)

“I believe that Dr. El Mohtar is one of the more promising young investigators in geotechnical engineering at the present time.”

“.... one of the leading investigators in the next generation of geotechnical researchers.”

“In summary, I believe Dr. Chadi El Mohtar has established himself as one of the leading young investigators among his colleagues at US Universities.”

Thomas O'Rourke* (Cornell University)

“I think that Dr. El Mohtar’s development to date is consistent with the highest quality academics in his cohort at research-intensive universities.”

* Member of the National Academy of Engineering

Despite an otherwise very positive letter, *Kavazanjian* also presented an area of concern. Specifically, “While he has received a prestigious NSF CAREER award, this appears to be the only substantial sponsored project (i.e., project in excess of \$100,000) on which he is the lead investigator. However, as noted above his scholarly productivity has been excellent and this, to my mind, is the primary measure by which candidates for promotion should be judged.”

Chadi is PI on one other project that is \$150 K. His share of research funding is less than the median (\$1.5 million) of 13 previous successful assistant professor promotions in CAEE. However, it is relevant to note that he has only been Co-PI on one project funded by the Texas Department of Transportation (TxDOT), a sponsor that historically dominates in terms of research funding within CAEE. TxDOT funding is generally not as competitive as, say, many federal funding agencies, and is often not conducive to sustained support of Ph.D. students who focus on more fundamental research like that done by Chadi and his students. Furthermore, as described above, Chadi is working to further diversify his research sponsors, with continued proposals to NSF, but also to the USGS, Federal Railway Administration, BNSF, BP, and TxDOT.

Academic Advising

Chadi actively advises and mentors both undergraduate and graduate students. In addition to the twice/year undergraduate advising sessions held in CAEE, Chadi has also mentored 15 undergraduate students in research. He has served as the Graduate Admissions Coordinator for the Geotechnical Engineering group since 2012, and in this capacity advises new students until they are matched with an advisor, and advises all M.S. students who pursue a coursework only degree. Chadi is also the faculty advisor to the graduate student chapter of the ASCE Geo-Institute at UT. Finally, Chadi is known to spend considerable time guiding Geotechnical Engineering graduate students on issues related to laboratory testing, and this includes students who are formally advised by other professors.

Administrative and Committee Service

Chadi has engaged in significant service to the department. He has served on the CAEE Curriculum Committee, ABET Review Committee, and Graduate Curricula and Policies Committee. He has also served on a faculty search committee for a position in geotechnical engineering, and as Graduate Admissions Coordinator for the Geotechnical Engineering area of CAEE.

Chadi has served as an officer of two ASTM committees or work groups related to his area of expertise, and as a member of the ASCE G-I Grouting Committee. He was also a session organizer for the fall 2013 conference of ASCE's Texas Section.


Honors

Chadi has received two major awards while in rank as an assistant professor. The first is his NSF CAREER award, which he received in 2012. The second is the ASCE Geo-Institute Arthur Casagrande Professional Development Award. The Casagrande Award recognizes a young professional (35 years of age or younger) who is an outstanding practitioner, researcher, or teacher of geotechnical engineering in the U.S. That Chadi received this award indicates that he is one of the top young researchers in geotechnical engineering nationally.

In 2013 Chadi was also invited to author a feature article in Geo-Strata, an ASCE Geo-Institute magazine. The paper was entitled, "The Geoengineering of Contaminated Sediments." His students also received the Best Student Paper Award at the 7th International Conference on Remediation of Contaminated Sediments.

Summary

I believe that Chadi meets or exceeds expectations for promotion in all areas. He has developed a strong and (importantly) independent research program in geotechnical engineering, and contributes significantly to the department as an advisor, committee member, and as someone who has single-handedly taken on a major change in the Geotechnical Engineering graduate curriculum. As someone who does complex experimental work, it took Chadi some time to build his research facility and to develop a research program. But he has done so, has hit his stride, is producing significant and independent publications in his field, and is growing in stature as evidenced by letters from external reviewers. He also has a vision of where he wants to take his research program in the future, and has the intellect, reputation and strong drive to realize that vision. Chadi struggled early on with teaching, but has improved every year. Overall, I would consider him now to be a good to very good teacher at the undergraduate level, and a satisfactory/average, but continuously improving, teacher at the graduate level. Notwithstanding his initial struggles with teaching, I support Chadi's case without qualification.



Richard L. Corsi, Ph.D., P.E.
ECH Bantel Professor for Professional Practice and Department Chair
5 September 2014

Chadi El Mohtar

Standard Resume

THE UNIVERSITY OF TEXAS AT AUSTIN
Cockrell School of Engineering
Standard Resume

FULL NAME: Chadi S. El Mohtar **TITLE:** Assistant Professor

DEPARTMENT: Civil, Architectural and Environmental Engineering

CITIZENSHIP: Lebanon (U.S. permanent resident)

EDUCATION:

Beirut Arab University	Civil Engineering	BSCE	June 2001
Michigan State University	Civil Engineering	MSCE	August 2003
Purdue University	Civil Engineering	Ph.D.	May 2008

PROFESSIONAL REGISTRATION, LICENSURES, CERTIFICATIONS:

Engineering in Training (EIT)	2008-present
Licensed Civil Engineer, Syndicate of Engineers and Architects, Beirut, Lebanon	2001-present

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

University of Texas at Austin	Assistant Professor	Fall 2008-present
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OTHER PROFESSIONAL EXPERIENCE:

Michigan State University	Teaching Assist. (CEE)	Spring 2002-Spring 2003
Purdue University	Teaching Assist. (Mathematics)	Fall 2003-Spring 2004
Purdue University	Teaching Assist. (CEE)	Spring 2004-Fall 2007
Purdue University	Research Assistant (CEE)	Summer 2004-Fall 2008
Purdue University	Post-Doctoral	Summer 2008

HONORS AND AWARDS:

Research Enhancement Award. Awarded by Michigan State University.	2003
Summer Research Assignment Award. Awarded by The University of Texas at Austin.	2009
Excellence in Engineering Education (ExCEED) Fellow. Awarded by ASCE.	2010
Faculty Early Career Development (CAREER) Award. Awarded by the National Science Foundation (NSF).	2012
Top Student paper. Awarded at the 7 th International Conference on Remediation of Contaminated Sediments in Dallas, TX to my graduate students.	2013
Arthur Casagrande Professional Development Award. Awarded by ASCE Geo-Institute.	2014
REES2014 Faculty Grant Award. Awarded by the American Railway Engineering and Maintenance-of-Way Association (AREMA).	2014

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

Syndicate of Engineers and Architects, Beirut, Lebanon	2001-present
Chi Epsilon, The National Civil Engineering Honor Society	2002-present
Tau Beta Pi, The Engineering Honor Society	2006-present
Purdue Geotechnical Society (PGS)	2008-present
International Society of Soil Mechanics and Geotechnical Engineering	2009-present

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GeoInstitute, the Geotechnical Engineering branch of ASCE	2009-present
American Society of Civil Engineers (ASCE)	2009-present
American Society for Testing and Materials (ASTM)	2009-present

UNIVERSITY COMMITTEE ASSIGNMENTS:

A. Departmental

Advisor: Geo-Institute Graduate Student chapter	2008-present
Organizer: Lymon C. Reese Memorial Golf Tournament (in association with the Reese Lecture)	2008-present
Geotechnical Engineering Liaison for the CAEE External Advisory Committee	2008
Member: Curriculum Committee	2009-2010
Member: Geotechnical Laboratory Manager Hiring Committee	2009
Member: ABET Review Committee (Program Outcome-5 Subcommittee)	2009
Member: Distinguished Lecture Series	2009-present
Member: Graduate Curricula & Policies Committee	2010-present
Coordinator, Geotechnical Engineering Graduate Recruiting	2010-present
Organizer: Explore UT Geotechnical Engineering Activities	2011-present
Member: Geotech faculty search committee	2012
Coordinator: Geotechnical Engineering Graduation Admission	2012-present

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

A. Committee Memberships

Member: ASTM D 18: Soil and Rock Committee	2010-present
Member: ASCE Grouting Committee (Geo-Institute)	2011-present
Member: ASCE Soil Properties and Modeling committee	2012-present
Secretary: ASTM D18.09: Cyclic and Dynamic Properties of Soil	2012-present
Task Group Chairman: ASTM WK38054, Cyclic Simple Shear Test with load Control and with Displacement Control	2012-present

B. Organizing Conference Sessions

Session Organizer: 2013 ASCE Texas Section Fall Conference and Centennial Celebration- Geotechnical Research at the University of Texas at Austin	2013
Co-Chair: GeoCongress 2014 session- Hydrocarbon Bearing Geomaterials for Sustainable Energy Production	2014

C. Technical Paper Reviews

ASCE Journal of Geotechnical and Geoenvironmental Engineering	2007-present
International Foundation Congress and Equipment Exposition	2009
17th International Conference on Soil Mechanics and Foundations Engineering	2009
ASTM Journal of Testing Evaluation	2009-present
GeoShanghai- International conference on Soil Mechanics, Shanghai, China	2010
Geofrontiers: Advances in Geotechnical Engineering, Dallas, TX	2011
ASTM Geotechnical Testing Journal	2012-present
ASCE Journal of Materials in Civil Engineering	2012-present
Soils and Foundations Journal	2012-present

C. Others

National Science Foundation, CMMI-GEOMM Panel Review	2011
National Science Foundation, CMMI-GEOMM Ad-Hoc Review	2012

PUBLICATIONS: Advisees' names are underlined

A. Refereed Archival Journal Publications

Published:

- 1) Chatti, K. and **El Mohtar, C.S.** "Effect of Different Axle Configurations on Fatigue Life of Asphalt Concrete Mixture," Journal of the Transportation Research Record, No.1891, pp. 121-130, January 2004.

After Joining UT:

- 2) **El Mohtar, C.S.** and Khire, M.V. "Vertical Pullout Test for Measurement of Soil-Geomembrane Interface Friction Parameters," ASTM Geotechnical Testing Journal, Vol. 32, No. 4, pp. 365-371, July 2009.
- 3) Erten, M.B., Gilbert, R.B., **El Mohtar, C.S.**, and Reible, D.D. "Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments," ASTM Geotechnical Testing Journal: Innovations in Characterizing the Mechanical and Hydrological Properties of Unsaturated Soils, Vol. 34, No. 5, pp. 467-475, September 2011.
- 4) **El Mohtar, C.S.** and Rugg, D.A. "New Three-Way Split Mold Design and Experimental Procedure for Testing Soft, Grouted Soils," ASTM Geotechnical Testing Journal, Vol. 34, No. 6, pp. 365-371, November 2011.
- 5) Erten, M.B., Reible, D.D., Gilbert, R.B., and **El Mohtar, C.S.** "The Performance of Organophilic Clay on Nonaqueous Phase Liquid Contaminated Sediments under Anisotropic Consolidation," Journal of ASTM International STP 1554, Contaminated Sediments: Restoration of Aquatic Environment, pp. 32-44, November 2012.
- 6) Yoon, J. and **El Mohtar, C.S.** "Disturbance Effect on Time-Dependent Yield Stress Measurement of Bentonite Suspension," ASTM Geotechnical Testing Journal, Vol. 36, No.1, pp. 78-87, January 2013.
- 7) **El Mohtar, C.S.**, Drnevich, V.P., Santagata, M.C. and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Undrained Shear Modulus Reduction of Sand with Plastic Fines" ASTM Geotechnical Testing Journal, Vol. 36, No. 4, pp. 484-492, July 2013.
- 8) **El Mohtar, C.S.**, Bobet, A., Santagata, M.C., Drnevich, V.P., Johnston, C.T. "Liquefaction Mitigation Using Bentonite Suspensions," ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol. 139, pp. 1369-1380, August 2013.
- 9) Yoon, J. and **El Mohtar, C.S.** "Groutability of Granular Soils Using Sodium Pyrophosphate Modified Bentonite Suspensions," Tunneling and Underground Space Technology, Vol. 37, pp. 135-145, August 2013.
- 10) Yoon, J. and **El Mohtar, C.S.** "Dynamic Rheological Properties of Sodium Pyrophosphate-Modified Bentonite Suspensions for Liquefaction Mitigation," Clays and Clay Minerals, Vol. 61, No. 4, pp. 319-327, October 2013.
- 11) Yoon, J. and **El Mohtar, C.S.** "Evaluation of Time-Dependent Yield Stress Using Dynamic Rheological Property of Bentonite Suspensions," ASTM Geotechnical Testing Journal, Vol. 37, No. 1, pp. 85-93, January 2014.
- 12) **El Mohtar, C.S.**, Bobet, A., Drnevich, V.P., Johnston, C.T., and Santagata, M.C. "Pore Pressure Generation in Sand with Bentonite: from Small Strains to Liquefaction," Geotechnique, Vol. 64, No. 2, pp. 108-117, February 2014.
- 13) Yoon, J. and **El Mohtar, C.S.** "Groutability of Granular Soils Using Bentonite Grout Based on Filtration Model," Transport in Porous Media, Vol. 102, No. 3, pp. 365-385, February 2014.
- 14) Yoon, J. and **El Mohtar, C.S.** "Rheological Properties of Sodium Pyrophosphate Modified Bentonite Suspensions for Seepage Control," Journal of Engineering Geology, Volume 179, pp. 32-40, September 2014.

Accepted (in press):

- 15) Santagata, M.C., Clarke, J.P., Bobet, A., Drnevich, V.P., **El Mohtar, C.S.**, Huang, P.-T. and Johnston, C.T. "Rheology of Concentrated Bentonite Dispersions Treated with Sodium Pyrophosphate for Application in Mitigating Earthquake-Induced Liquefaction," Applied Clays Science, doi: 10.1016/j.clay.2014.05.017, published online on July 30th, 2014.

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Under Review:

- 16) Yoon, J. and **El Mohtar, C. S.** "A Filtration Model for Evaluating Maximum Penetration Distance of Bentonite Grout through Granular Soils," Journal of Computers and Geotechnics.
- B. Refereed Conference Proceedings

Published:

- 1) Chatti, K., Salama, H. and **El Mohtar, C.S.** "Effect of Heavy Trucks with Large Axle Groups on Asphalt Pavement Damage," Proceedings 8th International Symposium on Heavy Vehicle Weights and Dimensions (HVWD), Gauteng Province, South Africa, 10 p., March 14-18, 2004.
- 2) Chatti, K., Lee, H. and **El Mohtar, C.S.** "Fatigue Life Predictions for Asphalt Concrete Subjected to Multiple Axle Loadings," Proceedings 8th International Symposium on Heavy Vehicle Weights and Dimensions (HVWD), Gauteng Province, South Africa, 10 p., March 14-18, 2004.
- 3) **El Mohtar, C.S.**, Clarke, J., Bobet, A., Santagata, M., Dnevich, V., and Johnston, C. "Cyclic Response of a Sand with Thixotropic Pore Fluid," ASCE Geotechnical Special Publication GSP-181: Geotechnical Earthquake Engineering and Soil Dynamics Conference IV, GEESD IV, 10 p., May 18-22, 2008.
- 4) **El Mohtar, C.S.**, Santagata, M., Bobet, A., Dnevich, V.P., and Johnston, C.T. "Effect of Plastic Fines on the Small Strain Stiffness of Sand," IS-Atlanta: Fourth International Symposium, Deformation Characteristics of Geomaterials, pp. 245-251, September 22-24, 2008.

After Joining UT:

- 5) **El Mohtar, C.S.** "Evaluation of the 5% Double Amplitude Strain Criterion," Proceedings of the 17th International Conference on Soil Mechanics and Geotechnical Engineering, ISSMGE, Alexandria, Egypt, pp. 80-83, October 5-9, 2009.
- 6) Brown, A.C., Ellis, T., Dellinger, G., **El Mohtar, C.S.**, Zornberg, J.G., and Gilbert, R.B. "Long-Term Monitoring of a Drilled Shaft Retaining Wall in Expansive Clay: Behavior Before and During Excavation," ASCE Geotechnical Special Publications GSP-211, Geofrontiers 2011: Advances in Geotechnical Engineering, Dallas, TX, pp. 3516-3525, March 13-16, 2011.
- 7) Hwang, H., Yoon, J., Rugg, D. and **El Mohtar, C.S.** "Hydraulic Conductivity of Bentonite Grouted Sand," ASCE Geotechnical Special Publications GSP-211, Geo-Frontiers 2011: Advances in Geotechnical Engineering, Dallas, TX, pp. 1372-1381, March 13-16, 2011.
- 8) Rugg, D.A., Yoon, J., Hwang, H. and **El Mohtar, C.S.** "Undrained Shearing Properties of Sand Permeated with a Bentonite Suspension for Static Liquefaction Mitigation," ASCE Geotechnical Special Publications GSP-211, Geo-Frontiers 2011: Advances in Geotechnical Engineering, Dallas, TX, pp. 677-686, March 13-16, 2011.
- 9) Yoon, J. and **El Mohtar, C.S.** "Time Dependent Rheological Behavior of Modified Bentonite Suspensions," ASCE Geotechnical Special Publications GSP-225, GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, pp. 1195-1204, March 25-29, 2012.
- 10) Erten, M.B., **El Mohtar, C.S.**, Reible, D.D. and Gilbert, R.B. "Consolidation Properties of NAPL Contaminated Sediments," ASCE Geotechnical Special Publications GSP-225, GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, pp. 4107-4115, March 25-29, 2012.
- 11) Kwan, W.S. and **El Mohtar, C.S.** "Comparison between Shear Strength of Dry Sand Measured in CSS Device using Wire-Reinforced Membranes and Stacked Rings," ASCE Geotechnical Special Publications GSP-234, GeoCongress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, pp. 1111-1119, February 23-26, 2014.
- 12) Kwan, W.S., Sideras, S., **El Mohtar, C.S.**, and Kramer, S. "Pore Pressure Generation under Different Transient Loading Histories," Proceedings of the 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, AK, pp. 1-11, July 21-25, 2014.

Under Review:

- 13) Brown, A., Dellinger, G., Helwa, A., **El Mohtar, C.S.**, Zornberg, J. Gilbert, R., "Monitoring a Drilled Shaft Retaining Wall in Expansive Clays: Long-Term Performance in Response to Moisture Fluctuations,"

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International Foundations Congress and Equipment Expositions (IFCEE2015), San Antonio, TX, March 17-21, 2015.

- 14) **El Mohtar, C.S., ElKhattab, M.** and **Sangroya, R.** "Post-Grouting Stability of Bentonite Suspensions within Sand Pores," International Foundations Congress and Equipment Expositions (IFCEE2015), San Antonio, TX, March 17-21, 2015.

C. Other Major Publications

Featured Article:

- 1) **El Mohtar, C. S.** "The Geoengineering of Contaminated Sediments," Featured Article, Geo-Strata, Geo-Institute of ASCE, Vol. 17, No. 6, November/December 2013, pp. 48-52,54.

Non-Refereed Conference Proceedings:

- 2) Abou Najm, M. **El Mohtar, C.S.**, Mohtar, R. and Drnevich, V.P. "Improving TDR Measurements through Accounting for Soil Structural Properties," ASABE Annual International Meeting, Providence, RI, June 29-July 2, 2008.
- 3) Clarke, J.P., Bobet, A., Drnevich, V.P., **El Mohtar, C.S.**, Johnston, C.T., Santagata, M. "Sodium Pyrophosphate-Bentonite Suspensions for Use in Liquefaction Mitigation," International Clay Conference, Castellana Marina (TA) – Italy, June 14-20, 2009.
- 4) **Erten, M.B.**, **Goff, M.**, Reible, D.D., Gilbert, R.B. and **El-Mohtar, C.S.** "Development of a Laboratory Test to Evaluate NAPL Mobility in Sediments," Sixth International Conference on Remediation of Contaminated Sediments, New Orleans, LA, February 7-10, 2011.
- 5) **Yoon, J.S.** and **El Mohtar, C.S.** "Groutability of clean sand with sodium pyrophosphate modified bentonite suspensions," IS-GI Brussels 2012: Recent Research, Advances and Execution Aspects of Ground Improvement Works, ISSMGE TC 211 Conference, Brussels, Belgium, May 30-June 1, 2012.
- 6) **El Mohtar, C.S.**, Drnevich, V.P., Santagata, M., and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Shear Modulus of Sand with Plastic Fines," ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.
- 7) **Erten, M.B.**, Reible, D.D. **El Mohtar, C.S.** and Gilbert, R.B. "The Behavior Organophilic Clay as an In Situ Cap on Nonaqueous Phase Liquid Contaminated Sediments," 7th International Conference on Remediation of Contaminated Sediments, Dallas, TX, February 4-7, 2013.
- 8) **ElKhattab, M.**, **Yoon, J.S.** and **El Mohtar, C.S.** "Prediction of Penetration Length of Bentonite Slurry in Soil-Bentonite Slurry Walls," 7th International Conference on Remediation of Contaminated Sediments, Dallas, TX, February 4-7, 2013. (*recipient of best student paper award*)
- 9) Betak, J.F., Bhasin, A. and **El Mohtar, C.S.** "The Railroad Engineering Sustainability Lifecycle," 100th ASLRRA Annual Meeting, Atlanta, GA, April 28-30, 2013.
- 10) **Spears, A.**, **Yoon, J.**, **Hwang, H.** and **El Mohtar, C.S.** "Effects of Bentonite Hydration and Uniformity on Hydraulic Conductivity of Sand-Bentonite Mixtures," National Society of Black Engineers (NSBE) 40th Annual Conventions, Nashville, TN, March 26-30, 2014.

D. Technical Reports

- 1) **El Mohtar, C.S.** "The Effect of Different Axle Configurations on the Fatigue Life of an Asphalt Concrete Mixture," MS Thesis presented to the Dept. of Civil & Environmental Engineering, Michigan State University, East Lansing, MI 48824, August 2003.
- 2) **El Mohtar, C.S.** "Pore Fluid Engineering: An Autoadaptive Design for Liquefaction Mitigation," Ph.D. dissertation submitted to the Faculty of Purdue University, West Lafayette, IN 47907, May 2008.
- 3) Chatti, K., Manik, A., Salama, H., Haider, S.W., Brake, N., and **El Mohtar, C.S.** "Effect of Michigan Multi-Axle Trucks on Pavement Distress Volume I – Literature Review and Analysis of In-Service Pavement Performance Data," submitted to Michigan Department of Transportation as part of Project RC-1504, February 2009.

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- 4) Chatti, K., Manik, A., Salama, H., **El Mohtar, C.S.**, and Suk Lee, H. "Effect of Michigan Multi-Axle Trucks on Pavement Distress Volume II – Flexible Pavements," submitted to Michigan Department of Transportation as part of Project RC-1504, February 2009.
- 5) Chatti, K., Manik, A., Salama, H., **El Mohtar, C.S.**, and Suk Lee, H. "Effect of Michigan Multi-Axle Trucks on Pavement Distress Volume III – Rigid Pavements," submitted to Michigan Department of Transportation as part of Project RC-1504, February 2009.
- 6) Brown, A., Dellinger, G., **El Mohtar, C.S.**, Zornberg, J., and Gilbert, R.B. "The Long-Term Performance of a Drilled Shaft Retaining Wall in an Expansive Clay," Center of Transportation Research, Technical Report 0-6603-2, submitted to TxDOT, October 2013.

PRESENTATIONS: Advisees' names are underlined; (*Italicized listings were published before joining UT*)

A. Conference Talks

- 1) *Chatti, K. and **El Mohtar, C.S.** "The Effect of Different Axle Configurations on the Fatigue Life of an Asphalt Concrete Mixture," The Transportation Research Board 83rd Annual Meeting, Washington, D.C., January 2004.*
- 2) *Chatti, K., **El Mohtar, C.S.** and Salama, H. "Effect of Heavy Trucks with Large Axle Groups on Asphalt Pavement Damage," 8th International Symposium on Heavy Vehicle Weights and Dimensions, Gauteng Province, South Africa, March 14-18, 2004.*
- 3) *Chatti, K., **El Mohtar, C.S.**, and Lee, H.S. "Fatigue Life Predictions for Asphalt Concrete Subjected to Multiple Axle Loadings," 8th International Symposium on Heavy Vehicle Weights and Dimensions, Gauteng Province, South Africa, March 14-18, 2004.*
- 4) **El Mohtar, C.S.**, Bobet, A., Santagata, M., Drnevich, V., and Johnston, C. "Cyclic Response of Sand with Thixotropic Pore Fluid," ASCE Geotechnical Earthquake Engineering and Soil Dynamics Conference, Sacramento, CA, May 2008.
- 5) *Abou Najm, M., **El Mohtar, C.S.**, Mohtar, R. and Drnevich, V.P. "Improving TDR Measurements through Accounting for Soil Structural Properties," ASABE Annual International Meeting, Providence, RI, June 2008.*
- 6) **El Mohtar, C.S.**, Santagata, M., Bobet, A., Drnevich, V., and Johnston, C. "Effect of Plastic Fines on the Small Strain Stiffness of Sand," IS-Atlanta: Fourth International Symposium, Deformation Characteristics of Geomaterials, Atlanta, GA, September 22-24, 2008.
- 7) Santagata, M., Clarke, J., Bobet, A., Drnevich, V.P., **El Mohtar, C.S.**, and Johnston, C.T. "Sodium Pyrophosphate – Bentonite Suspensions for Use in Liquefaction Mitigation," 46th Annual Meeting of the Clay Minerals Society, Billings, MT, June 5-11, 2009.
- 8) Santagata, M., Clarke, J., Bobet, A., Drnevich, V.P., **El Mohtar, C.S.**, and Johnston, C.T. "Sodium Pyrophosphate – Bentonite Suspensions for Use in Liquefaction Mitigation," 14th International Clay Conference, Castellana Marina, Italy, June 18, 2009.
- 9) Brown, A.C., Ellis, T., Dellinger, G., **El Mohtar, C.S.**, Zornberg, J., and Gilbert, R.B. "Long-Term Monitoring of a Drilled Shaft Retaining Wall in Expansive Clay: Behavior Before and During Excavation," Geofrontiers March 2011, Dallas, TX.
- 10) Hwang, H., Yoon, J.S., Rugg, D. and **El Mohtar, C.S.** "Hydraulic Conductivity of Bentonite Grouted Sand," Geofrontiers March 2011, Dallas, TX.
- 11) Rugg, D.A., Yoon, J.S., Hwang, H., and **El Mohtar, C.S.** "Undrained Shearing Properties of Sand Permeated with a Bentonite Suspension for Static Liquefaction Mitigation," Geofrontiers March 2011, Dallas, TX.
- 12) Yoon, J.S. and **El Mohtar, C.S.** "Time Dependent Rheological Behavior of Modified Bentonite Suspensions," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.
- 13) Erten, M.B., **El Mohtar, C.S.**, Reible, D.D., and Gilbert, R.B. "Consolidation Properties of NAPL Contaminated Sediments," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.

- 14) **El Mohtar, C.S.**, Dmevich, V.P., Santagata, M. and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Shear Modulus of Sand with Plastic Fines," ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.
- 15) Erten, M.B., Reible, D.D., **El Mohtar, C.S.**, and Gilbert, R.B. "The Behavior Organophilic Clay as an In Situ Cap on Nonaqueous Phase Liquid Contaminated Sediments," 7th International Conference on Remediation of Contaminated Sediments, Dallas, TX, February 4-7, 2013.
- 16) Betak, J.F., Bhasin, A. and **El Mohtar, C.S.** "The Railroad Engineering Sustainability Lifecycle," 100th ASLRRA Annual Meeting, Atlanta, GA, April 28-30, 2013.
- 17) Sangroya, R., **El Mohtar, C.S.**, Yoon, J. and ElKhattab, M. "Applying Rheology to Enhance Grouting Prediction in Geotechnical Applications," 2013 ASCE Texas Section Fall Conference and Centennial Celebration, Dallas, TX, September 11-14, 2013.
- 18) Kwan, W.S., Kramer, S., Sideras, S., Rathje, E.M. and **El Mohtar, C.S.** "Pore Pressure Generation under Different Loading Histories," 2013 ASCE Texas Section Fall Conference and Centennial Celebration, Dallas, TX, September 11-14, 2013.
- 19) Kwan, W.S., and **El Mohtar, C.S.** "Comparison between Shear Strength of Dry Sand Measured in CSS Device using Wire-Reinforced Membranes and Stacked Rings," GeoCongress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, February 23-26, 2014.
- 20) Spears, A., Yoon, J., Hwang, H. and **El Mohtar, C.S.** "Effects of Bentonite Hydration and Uniformity on Hydraulic Conductivity of Sand-Bentonite Mixtures," National Society of Black Engineers' 40th Annual Conventions, Nashville, TN, March 26-30, 2014.

B. Invited Talks

- 21) **El Mohtar, C.S.** "Pore Fluid Engineering: An AutoAdaptive Design for Liquefaction Prevention," invited Speaker, American University of Beirut, March 2007.
- 22) **El Mohtar, C.S.** "Pore Fluid Engineering: An AutoAdaptive Design for Liquefaction Mitigation," invited Speaker, University of Texas at Austin, March 2008.
- 23) **El Mohtar, C.S.** "Top 10 Things a New Faculty Should Know," New Faculty Orientation, Cockrell School of Engineering, Austin, TX, August 2009.
- 24) **El Mohtar, C.S.** "Top 10 Things a New Faculty Should Know," New Faculty Orientation, Cockrell School of Engineering, Austin, TX, August 2010.
- 25) **El Mohtar, C.S.** "Geotechnical Research at the University of Texas," CAEE Undergraduate Advisory Board's 1st Research Forum, April 12, 2012.
- 26) **El Mohtar, C.S.** "Career in Academia: First-hand Experience," Talk to the GeoInstitute Graduate student chapter at Purdue University. Web-talk, October 24th, 2012.
- 27) **El Mohtar, C.S.** "Geotechnical Research at the University of Texas," CAEE Undergraduate Advisory Board's 2nd Research Forum, March 26, 2013.
- 28) **El Mohtar, C.S.** "Overview of Prof. El Mohtar's Research at UT," Talk to Student Engineering Council as part of Research Symposium week April 17th, 2013.
- 29) **El Mohtar, C.S.** "Grouting in Tunneling," Invited talk to CE 387S: Underground Construction, the University of Texas at Austin, Austin, TX, December 4, 2013.
- 30) **El Mohtar, C.S.** "Putting Some Engineering into Our Grouting Practice," Invited talk at the University of Texas at San Antonio, San Antonio, TX, March 21, 2014.
- 31) **El Mohtar, C.S.** "Engineering Our Grouts," Invited talk at University of Washington, Seattle, WA, May 22, 2014.

C. Poster Presentations

- 32) Erten, M.B., Goff, M., Reible, D.D., Gilbert, R.B. and **El-Mohtar, C.S.** "Development of a Laboratory Test to Evaluate NAPL Mobility in Sediments," Sixth International Conference on Remediation of Contaminated Sediments, New Orleans, LA, February 7-10, 2011.

Chadi El Mohtar

Standard Resume

- 33) EiKhattab, M., Yoon, J.S. and **El Mohtar, C.S.** "Prediction of Penetration Length of Bentonite Slurry in Soil-Bentonite Slurry Walls," 7th International Conference on Remediation of Contaminated Sediments held in Dallas, TX, February 4-7, 2013.
- 34) Kwan, W.S., Sideras, S., El Mohtar, C.S., and Kramer, S. "Pore Pressure Generation under Different Transient Loading Histories," Proceedings of the 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, AK, July 21-25, 2014.

GRANTS AND CONTRACTS:

Co-PI	Title	Agency/Sponsor	Grant Total	Candidate Share	Grant Period
N/A	Lab Simulation of In-Situ Grouting for Liquefaction Mitigation	Office of Dean of Graduate Studies	17,556	17,556	06/09-07/09
D. Reible* and R. Gilbert	Effective Containment of NAPL in Sediments	Texas Hazardous Waste Research Center	67,500	11,250	09/08-08/10
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Texas DOT	731,754	243,918	09/09-08/13
R. Gilbert*	Consolidation and Shear Strength Testing of Contaminated Sediments	Geosyntec Corporation	50,000	25,000	09/09-08/11
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Fugro Consultants, Inc.	60,000	20,000	09/09-08/11
N/A	Measuring the Resilient Modulus For Port of Corpus Christi ¹	HVJ Associates – Austin, TX	4,313	4,313	05/10
N/A	Measuring the Shear Strength under Undrained Conditions ¹	GeoPentech, Santa Anna, CA	1,500	1,500	07/10
S. Kramer*, M. Khun, and E. Rathje (I am PI for UT share)	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation	NSF/NEES	638,327 166,732 ^x	166,732	09/10-08/13
N/A	CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media	NSF	400,000	400,000	12/12-11/17
D. Reible*	Geotechnical Investigation of Gowanus Canal Sediments: NAPL Expression ¹	GEI Consultants	12,600	6,300	10/12-02/13
N/A	Measuring Shear Strength of Soft limestone rocks using DST ¹	Freese and Nichols Inc.	9,200	9,200	06/13-07/13
R. Gilbert	Effectiveness of Piezometers in High-Plasticity Clays	Geosyntec Corporation	47,500	23,750	09/13-08/15
N/A	REU Supplement: CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media	NSF	10,000	10,000	1/14-08/14
K. Gray	Investigating the Interaction between Drilling Fluids and Well Formation from a combined Rheological and Physical Properties Context	Wider Windows Joint Industry Project	150,000	150,000	08/14-07/17

Chadi El Mohtar

Standard Resume

K. Folliard*, J. Prozzi, J. Zornberg, M. Blackhurst, A. Smith and R. Ferron	Texas Rating Index for Pavement Sustainability (TRIPS)	Texas DOT	1,000,000	97,154	submitted
J. Prozzi*, K. Folliard, A. Kwasinski, A. Smith, J. Zornberg, R. Ferron, and L. Kallivokas	Texas Intelligent Highway	Texas DOT	1,085,544	99,354	submitted
N/A	Incorporating Temporal Ground Motion Characteristics for Improved Pore Pressure Prediction Models.	USGS	81,676	81,676	submitted
A. Bhasin and J. Betak	Accelerated Track Structure Testing to Evaluate Track Failure and Degradation Monitoring Tools	Federal Railway Administration	350,000	150,000	submitted

* indicates lead PI for projects that I am not the lead PI for.

ⁱ indicates industry service contracts.

^x indicates University of Texas share of the total grant.

Summary of Grants and Contracts since joining UT:

Career Total	\$1,728,655
Career Candidate Share	\$1,089,519
In Rank Total	\$1,728,655
In Rank Candidate Share	\$1,089,519

PH.D. SUPERVISIONS COMPLETED:

Name	Year	Department	Co-Supervisor	University
Yoon, Jisuk	2011	Civil Engineering	N/A	University of Texas at Austin
Dissertation Title: Application of Pore Fluid Engineering for Improving the Hydraulic Performance of Granular Soils				
Erten, Mustafa	2012	Civil Engineering	R.B. Gilbert	University of Texas at Austin
Dissertation Title: Geotechnical Containment of Sediments Contaminated with Non-Aqueous Phase Liquid				

M.S. SUPERVISIONS COMPLETED:

Name	Year	Department	Co-Supervisor	University
Hwang, Hansic	2010	Civil Engineering	N/A	University of Texas at Austin
Thesis title: Effects of Prehydration on Hydraulic Conductivity of SBMs				
Rugg, Dennis	2010	Civil Engineering	N/A	University of Texas at Austin
Thesis title: Undrained, Monotonic Shear Strength of Loose, Saturated Sand Treated with a Thixotropic Bentonite Suspension for Soil Improvement				
Goff, Mary	2011	Civil Engineering	R.B. Gilbert	University of Texas at Austin
Thesis title: Geotechnical Properties of Kaolinite Contaminated with a Non-Aqueous Phase Liquid				

Chadi El Mohtar

Standard Resume

Ellis, Trenton	2011	Civil Engineering	N/A	University of Texas at Austin
Thesis title: A Subsurface Investigation in Taylor Clay.				
Stromberg, Michael	2012	Civil Engineering	N/A	University of Texas at Austin
Thesis title: Commissioning of the Multi-Use Static/Dynamic Large-Scale Soil Testing Table				
ElKhatab, Mai	2013	Civil Engineering	N/A	University of Texas at Austin
Thesis title: Post-permeation Stability of Modified Bentonite Suspensions under Increasing Hydraulic Gradients				
Spears, Amber	2014	Civil Engineering	N/A	University of Texas at Austin
Thesis title: Effect of Bentonite Swelling on Hydraulic Conductivity of Sand-Bentonite Mixtures (SBMs)				

PH.D. IN PROGRESS:

A. Students admitted to candidacy (Date of admittance)

Kwan, Wing Shun (May, 2014)
 Sangroya, Ritika (August, 2014)

M.S. IN PROGRESS:

Brewster, Alexander (co-advised with R.B. Gilbert)

OTHER ADVISING AND RELATED STUDENT SERVICE:

A. Undergraduate Research Assistants

Jesse Kempt**
 Robert Green
 Andrew Higgins**
 Edward Jaimes**
 Mohamad Melhem*
 Abdallah Najdi*
 Christian Hogan
 Patricia Bennett**
 Hamza Jaffal*
 Ali Srour*
 Osama ElQuqa**
 Masaaki Ward
 Dany Hatoum*
 Abigail Kugel**
 Brian Landry**

* visiting undergraduate summer intern

** Signed up for independent study for at least one semester.

Chadi El Mohtar

Standard Resume

VITA:

Prof. El Mohtar is an Assistant Professor in the Department of Civil, Architectural and Environmental Engineering at The University of Texas at Austin. He earned his Bachelor's degree from Beirut Arab University in 2001, Master's degree from Michigan State University in 2003 and his PhD from Purdue University in 2008, all in Civil Engineering. After finishing his Ph.D., Prof. El Mohtar worked for 3 months as a postdoctoral fellow at Purdue University before joining the Geotechnical Engineering group in Fall 2008. As a teacher, Prof. El Mohtar combines state-of-the-art field applications with academics so that students are prepared for the workplace. He has developed physical and computer models to simulate soil behavior so students can better visualize the various geotechnical phenomena. As a geotechnical scholar researching pore fluid engineering geotechnics, he has developed a research program focused on auto-adaptive solutions for mitigating geo-challenges to existing and future infrastructures. His research involves engineering pore fluids and soils for resilient response to adverse and unforeseen loading conditions, with minimal compromise to the performance under normal working loads. Particularly, Prof. El Mohtar's work has focused on advancing the fundamental understanding of viscous flow within porous media through relating rheological properties of fluids and suspensions to the mechanical and hydraulic characteristics of geomaterials. Over the course of his research career, Prof. El Mohtar has expanded his work on pore fluid-soil micro-mechanics from ground improvement contexts to include mobilization of non-aqueous fluids within porous media in geo-environmental and petroleum engineering applications. As such, his research integrates the areas of rheology, deep-bed filtration, geotechnical, geo-environmental and petroleum engineering to better understand the progressive temporal and space variations during and post flow of complex fluids in porous media. Prof. El Mohtar has served as principal investigator/Co-principal investigator on externally funded projects in excess of \$1,500,000. He has supervised 27 PhD, Master's and undergraduate students during his tenure at UT. He is the author/co-author of more than 40 technical papers, conference proceedings and major reports. Prof. El Mohtar has received multiple awards including the NSF CAREER Award, ASCE Casagrande Professional Development Award, REES2014 Faculty Grant Award, among others.

For additional details and electronic copies of Prof. El Mohtar's publications, please refer to his personal webpage at: http://www.caece.utexas.edu/prof/El_Mohtar/

Chadi El Mohtar

Co-Authored Works

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Co-Authored Works**

A list of all published refereed journal publications and conference proceedings while in rank is provided below. For each publication, a brief description is provided to who each of the co-authors is and their contribution to the paper. For each paper, my level of contribution towards the intellectual property and production of the manuscript is listed based on a 3-level scale (primary, significant or supportive).

Advisees' names are underlined; the affiliation of all non UT co-authors is listed; serial numbers correspond to the paper numbers from the standard resume.

A. Refereed Archival Journal Publications

- 2) **El Mohtar, C.S.** and Khire, M.V. "Lab-Scale Vertical Pullout Test for Measurement of Soil-Geomembrane Interface Friction Parameters between Geomembranes and Cohesionless Soils," Geotechnical Testing Journal ASTM, Vol. 32 Issue 4, p.p. 365-371, July, 2009.

Cocauthors: At the time of the original work, Dr. Khire was an associate professor at the Michigan State University. I performed the experimental work and data collection under Dr. Khire's supervision during my time at MSU. I wrote the original paper during my PhD at Purdue University but redid the analysis and resubmitted after I joined UT.

My contributions: - Intellectual: primary - Production: primary

- 3) Erten, M., Gilbert, B., **El Mohtar, C.S.**, and Reible, D. "Development of a laboratory procedure to evaluate the consolidation potential of soft contaminated sediments," ASTM Geotechnical Testing Journal: Innovations in Characterizing the Mechanical and Hydrological Properties of Unsaturated Soils, Vol. 34, Issue 5, p.p. 467-475, September, 2011.

Cocauthors: At the time of the original work, Mr. Erten was a Ph.D. student working under Dr. Gilbert and my co-supervision and Dr. Reible was on his committee. Dr. Gilbert and Dr. Reible are faculty colleagues at the Civil, Architectural and Environmental Engineering Department at UT. Mr. Erten performed the experimental work and data collection under my supervision and wrote the first draft of the paper. Dr. Gilbert, Dr. Reible and I provided comments and revisions to the paper and I made major contributions with addressing all reviewer comments.

My contributions: - Intellectual: primary - Production: significant

- 4) **El Mohtar, C.S.** and Rugg, D. "New Three-Way Split Mold Design and Experimental Procedure for Testing Soft, Grouted Soils," ASTM Geotechnical Testing Journal, Vol. 34 Issue 6, pp. 365-371, November, 2011.

Cocauthors: At the time of the original work, Mr. Rugg was a Masters student working under my supervision.

- 5) Erten, M.B., Reible, D.D., Gilbert, R.B., and **El Mohtar, C.S.** "The Performance of Organophilic Clay on NAPL Contaminated Sediments under Anisotropic Consolidation," Journal of ASTM International STP 1554, Vol. 5, Contaminated Sediments: Restoration of Aquatic Environment, p.p. 32-44, November, 2012.

Chadi El Mohtar

Co-Authored Works

Cocauthors: At the time of the original work, Mr. Erten was a Ph.D. student working under Dr. Gilbert and my co-supervision and Dr. Reible was on his committee. Dr. Gilbert and Dr. Reible are faculty colleagues at the Civil, Architectural and Environmental Engineering Department at UT. Mr. Erten performed the experimental work and data collection under my supervision and wrote the first draft of the paper. Dr. Gilbert, Dr. Reible and I provided comments and revisions to the paper and helped addressing all reviewer comments.

My contributions: - Intellectual: primary - Production: significant

- 6) Yoon, J. and **El Mohtar, C. S.** "Disturbance effect on yield stress measurement of bentonite suspension," ASTM Geotechnical Testing Journal, Vol. 36, No.1, p.p. 78-87, January, 2013.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

- 7) **El Mohtar, C. S.**, Drnevich, V. P., Santagata, M. C. and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Undrained Shear Modulus Reduction of Sand with Plastic Fines" ASTM Geotechnical Testing Journal, Vol. 36, No. 4, p.p. 484-492, July, 2013.

Cocauthors: Dr. Santagata and Dr. Bobet were my co-advisers during my Ph.D. and Dr. Drnevich served on my committee. I performed the experimental work and data collection and some of the analysis during my time at Purdue. I finished the data analysis and wrote the paper after joining UT. Dr. Santagata, Dr. Bobet and Dr. Drnevich provided comments on the paper.

My contributions: - Intellectual: primary - Production: primary

- 8) **El Mohtar, C. S.**, Bobet, A., Santagata, M.C., Drnevich, V.P., Johnston C. "Liquefaction Mitigation using Bentonite Suspensions," Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Vol. 139, No. 8, p.p. 1369-1380, August, 2013.

Cocauthors: Dr. Santagata and Dr. Bobet were my co-advisers during my Ph.D. and Dr. Drnevich and Dr. Johnston served on my committee. I performed the experimental work and data collection and some of the analysis during my time at Purdue. I finished the data analysis and wrote the paper after joining UT. Dr. Santagata, Dr. Bobet, Dr. Drnevich and Dr. Johnston provided comments on the paper.

My contributions: - Intellectual: primary - Production: primary

- 9) Yoon, J. and **El Mohtar, C. S.** "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" Tunneling and Underground Space Technology, Vol. 37 p.p. 135-145, August, 2013.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

- 10) Yoon, J. and **El Mohtar, C. S.** "Dynamic rheological properties of sodium pyrophosphate modified bentonite suspensions for liquefaction mitigation" Clays and Clay Minerals, Volume 61, No. 4, 319-327, October, 2013.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

- 11) Yoon, J. and **El Mohtar, C. S.** "Evaluation of time-dependent yield stress using dynamic rheological property of bentonite suspensions" ASTM Geotechnical Testing Journal, Vol. 37, No. 1, p.p. 85-93, January, 2014.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

Chadi El Mohtar

Co-Authored Works

- 12) **El Mohtar, C. S.**, Drnevich, V. P., Santagata, M. C. and Bobet, A. "Pore pressure generation in Sand with Plastic Fines" *Geotechnique*. Volume 64, No. 2, pp. 108-117, February, 2014.

Cocauthors: Dr. Santagata and Dr. Bobet were my co-advisers during my Ph.D. and Dr. Drnevich served on my committee. I performed the experimental work and data collection and some of the analysis during my time at Purdue. I finished the data analysis and wrote the paper after joining UT. Dr. Santagata, Dr. Bobet and Dr. Drnevich provided comments on the paper.

My contributions: - Intellectual: primary - Production: primary

- 13) Yoon, J. and **El Mohtar, C. S.** "Groutability of Granular Soils using Bentonite Grout based on Filtration Model" *Transport in Porous Media*. Volume 102, Issue 3, p.p. 365-385, February, 2014.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

- 14) Yoon, J. and **El Mohtar, C.S.** "Rheological properties of sodium pyrophosphate modified bentonite suspensions for seepage control" *Journal of Engineering Geology*, Vol. 179, p.p. 32-40, Sept. 2014.

Cocauthors: At the time of writing this paper, Mr. Yoon was a Ph.D. student working under my supervision.

B. Refereed Conference Proceedings

- 4) **El Mohtar, C.S.**, Santagata, M., Bobet, A., Drnevich, V., and Johnston, C. "Effect of Plastic Fines on the Small Strain Stiffness of Sand," *IS-Atlanta: Fourth International Symposium, Deformation Characteristics of Geomaterials*, Vol. 1, pp. 245-251, September 22-24, 2008.

Cocauthors: Dr. Santagata and Dr. Bobet were my co-advisers during my Ph.D. and Dr. Drnevich and Dr. Johnston served on my committee. I performed the experimental work and data collection and some of the analysis during my time at Purdue. I finished the data analysis and wrote the paper after joining UT. Dr. Santagata, Dr. Bobet, Dr. Drnevich and Dr. Johnston provided comments on the paper.

My contributions: - Intellectual: primary - Production: primary

- 6) Brown, A.C., Ellis, T., Dellinger, G., **El Mohtar, C.S.**, Zornberg, J., and Gilbert, R.B. "Long-Term Monitoring of a Drilled Shaft Retaining Wall in Expansive Clay: Behavior Before and During Excavation," *ASCE Geotechnical Special Publications GSP-211, Geofrontiers: Advances in Geotechnical Engineering*, p.p. 3516-3525, Dallas, TX, March 13-16, 2011.

Cocauthors: At the time of the original work, Mr. Brown was a Ph.D. student working under Dr. Gilbert's supervision, Mr. Dellinger was a Masters student working under Dr. Gilbert and Dr. Zornberg co-supervision and Mr. Ellis was a Masters student working under my supervision. Dr. Gilbert and Dr. Zornberg are faculty colleagues at the Civil, Architectural and Environmental Engineering Department at UT. Mr. Brown was the lead graduate student in performing the field experimental work and data collection with the help of Mr. Dellinger and Mr. Ellis. Mr. Ellis was in charge of the laboratory testing under my supervision. Mr. Brown (with help from Mr. Ellis and Mr. Dellinger) wrote the first draft of the paper. Dr. Gilbert, Dr. Zornberg and I provided comments and revisions to the paper and helped addressing all reviewer comments.

My contributions: - Intellectual: significant - Production: supportive

- 7) Hwang, H., Yoon, J., Rugg, D. and **El Mohtar, C.S.** "Hydraulic Conductivity of Bentonite Grouted Sand," *ASCE Geotechnical Special Publications GSP-211, Geofrontiers: Advances in Geotechnical Engineering*, p.p. 1372-1381, Dallas, TX, March 13-16, 2011.

Chadi El Mohtar

Co-Authored Works

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student and Mr. Rugg and Mr. Hwang were Masters students working under my supervision.

- 8) Rugg, D.A., Yoon, J.S., Hwang, H. and El Mohtar, C. S. "Undrained Shearing Properties of Sand Permeated with a Bentonite Suspension for Static Liquefaction Mitigation," ASCE Geotechnical Special Publications GSP-211, Geofrontiers: Advances in Geotechnical Engineering, p.p. 677-686, Dallas, TX, March 13-16, 2011.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student and Mr. Rugg and Mr. Hwang were Masters students working under my supervision.

- 9) Yoon, J.S. and El Mohtar, C.S. "Time dependent rheological behavior of modified bentonite suspensions," ASCE Geotechnical Special Publications GSP-225, GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.

Cocauthors: At the time of the original work, Mr. Yoon was a Ph.D. student working under my supervision.

- 10) Erten, M.B., El Mohtar, C.S., Reible, D.D. and Gilbert, R.B. "Consolidation Properties of NAPL Contaminated Sediments," ASCE Geotechnical Special Publications GSP-225, GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.

Cocauthors: At the time of the original work, Mr. Erten was a Ph.D. student working under Dr. Gilbert and my co-supervision and Dr. Reible was on his committee. Dr. Gilbert and Dr. Reible are faculty colleagues at the Civil, Architectural and Environmental Engineering Department at UT. Mr. Erten performed the experimental work and data collection under my supervision and wrote the first draft of the paper. Dr. Gilbert, Dr. Reible and I provided comments and revisions to the paper and helped addressing all reviewer comments.

My contributions: - Intellectual: primary - Production: significant

- 11) Kwan, W.S. and El Mohtar, C.S. "Comparison between Shear Strength of dry Sand Measured in CSS device using Wire-reinforced membranes and Stacked Rings," ASCE Geotechnical Special Publications GSP-234, GeoCongress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, Feb. 23-26, 2014.

Cocauthors: At the time of the original work, Mr. Kwan was a Ph.D. student working under my supervision.

- 12) Kwan, W.S., Sideras, S., El Mohtar, C.S., and Kramer, S. "Pore Pressure Generation under Different Transient Loading Histories", Proceedings of the 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014.

Cocauthors: At the time of the original work, Mr. Kwan was a Ph.D. student working under my supervision and Mr. Sideras was a Ph.D. student work under Dr. Kramer's supervision at the University of Washington. Mr. Kwan performed all the experimental work and data collection and worked on the data analysis and writing the first draft under my supervision and help. I reviewed and corrected the first draft and Dr. Kramer and Ms. Sideras provided comments on the final draft along with some consultation during the analysis stages.

My contributions: - Intellectual: primary - Production: Primary

Chadi El Mohtar

Works Forthcoming

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Works Forthcoming**

A list of all accepted (and published online) refereed journal publications and conference proceedings while in rank is provided below. For each publication, a brief description is provided to who each of the co-authors is and their contribution to the paper. For each paper, my level of contribution towards the intellectual property and production of the manuscript is listed based on a 3-level scale (primary, significant or supportive).

Advisees' names are underlined; the affiliation of all non-UT coauthors is listed.

A. Refereed Archival Journal Publications

Accepted and published online:

- 15) Santagata, M.C., Clarke, J.P., Bobet, A., Drnevich, V.P., El Mohtar, C.S., Huang, P.T. and Johnston, C.T., "Rheology of concentrated bentonite suspensions treated with sodium pyrophosphate for application in mitigating earthquake induced liquefaction" Applied Clays Science, doi: 10.1016/j.clay.2014.05.017, Accepted May 2014.

Coauthors: Dr. Santagata and Dr. Bobet were my co-advisers during my Ph.D.; Dr. Drnevich and Dr. Johnston served on my committee; Ms. Clarke and Mr. Huang were a Masters student and a junior Ph.D. student, respectively during the time this work was performed. I performed the initial experimental work and data collection and some of the analysis during my time at Purdue and Ms. Clarke and Mr. Huang performed the majority of the testing. Dr. Santagata finalized the data analysis and wrote the first draft of the paper. Dr. Bobet, Dr. Drnevich, Dr. Johnston and I provided comments and feedback on the paper.

My contributions: - Intellectual: significant - Production: supportive

Chadi El Mohtar

Works Forthcoming

Letter of acceptance for Journal Paper #15

From: "Applied Clay Sciences" <clay-ed@elsevier.com>
Subject: CLAY5209R2: Editor's decision: accepted
Date: May 21, 2014 12:18:44 PM EDT
To: mks@purdue.edu

Re manuscript: CLAY5209R2.

Title: Rheology of concentrated bentonite dispersions treated with sodium pyrophosphate for application in mitigating earthquake-induced liquefaction.

Authors: Maria Caterina Santagata, Ph.D.; Julia P Clarke, MS; Antonio Bobet, PhD; Vincent P Dmevich, PhD; Chadi S El-Mohtar, PhD; Pao-Tsung Huang, MS; Cliff T Johnston, PhD.

Corresponding author: Dr. Maria Caterina Santagata.

Dear Dr. Santagata,

I am pleased to inform you that your manuscript has now been accepted by the Editor for publication.

Your manuscript will soon be passed to the production department for further handling. Then you will receive further notice.

When your paper is published on ScienceDirect, you want to make sure it gets the attention it deserves. To help you get your message across, Elsevier has developed a new, free service called AudioSlides: brief, webcast-style presentations that are shown (publicly available) next to your published article. This format gives you the opportunity to explain your research in your own words and attract interest. You will receive an invitation email to create an AudioSlides presentation shortly. For more information and examples, please visit <http://www.elsevier.com/audioslides>.

Thank you for considering our journal for the publication of your research.

Kind regards,
For the Editor,

Faiza Bergaya, Editor
Applied Clay Science

Chadi El Mohtar

Leave of Absence Without Pay

CHADI S. EL MOHTAR, Ph.D.
ASSISTANT PROFESSOR
DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN

Leave of Absence Without Pay

No Leaves of
Absence
Without Pay.

Chadi El Mohtar

Master Promotion Summary Table

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING

THE UNIVERSITY OF TEXAS AT AUSTIN

Master Promotion Summary Table**Statistical Summary for “In Rank”**

Metric	Value
Peer-reviewed Journal Publications	14
Peer-reviewed Conference Publications	9
Corresponding Author on Peer-Reviewed Publications	11
Total Citations of all Publications (career)*	92
h-index (career)*	6
Google Scholar Total Citations of all Publications (career)	103
Google Scholar h-index (career)	6
Total Research Funding (\$)	\$1,728,655
Candidate Share Research Funding (\$)	\$1,089,519
Total Number of Grants/Contracts Received	14
Number of Grants/Contracts Received as PI	8
PhD Students Completed (count 1 if sole advisor, 0.5 if co-advised)	1.5
MS Students Completed (count 1 if sole advisor, 0.5 if co-advised)	6.5
PhD Students in Pipeline (as of 09/2014) (count 1 if sole advisor, 0.5 if co-advised)	3*
MS students in Pipeline (as of 09/2014) (count 1 if sole advisor, 0.5 if co-advised)	0.5
Courses Taught	16
# of Students Taught	535 (UG: 432 and Grad: 103)
Average Instructor Evaluation UG	4.19 (last 3 years: 4.36)
Average Instructor Evaluation Grad	3.64 (last 3 years: 3.77)
Average Course Evaluation UG	3.93 (last 3 years: 4.00)
Average Course Evaluation Grad	3.50 (last 3 years: 3.63)
Teaching Awards	0
Student Organizations Advised	1
Undergraduates Supervised	15
Journal Editorial Boards	0
Symposia Organized	2

*Source:

☒ Publish or Perish☐ ISI Web of Knowledge** = $\sum(\text{course GPA} \times \text{course enrolment}) / \sum \text{course enrolment}$

*This number includes 1 PhD student that will be appointed my new WW JIP project on 09/2014.

Chadi El Mohtar

Faculty Activity Reports

Faculty Annual Report for Year End August 31, 2012

Chadi El Mohtar, Ph.D.**Assistant Professor****Civil, Architectural, and Environmental Engineering Department**Signature: 

11/20/14

Part 1: Teaching Activities**A. COURSES TAUGHT:**

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. SECTIONS/STUDENTS
Fall	2011	CE 357	GEOTECHNICAL ENGINEERING
Fall	2011	CE 387L	1-CONSOL/SHEARING PROPS SOLIS
Spring	2012	CE 375	EARTH SLOPES/RETAINING STRUCTS

Individual Instructions

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. STUDENTS
Fall	2011	CE 397S	15 – DISSERTATION RESEARCH
Fall	2011	CE 397S	15 – DISSERTATION RESEARCH
Fall	2011	CE 698A	THESIS
Fall	2011	CE 699W	DISSERTATION
Fall	2011	CE 999W	DISSERTATION
Spring	2012	CE 377K	STUDIES IN CIVIL ENGINEERING
Spring	2012	CE 397S	15 – DISSERTATION RESEARCH
Spring	2012	CE 697S	15 – DISSERTATION RESEARCH
Spring	2012	CE 698A	THESIS
Spring	2012	CE 999W	DISSERTATION
Summer	2012	CE 397S	15 – DISSERTATION RESEARCH
Summer	2012	CE 698A	THESIS
Summer	2012	CE 698B	THESIS

B. GRADUATE STUDENT RESEARCH**Supervisor, PhD Dissertations**

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Jisuk Yoon	CAEE	Fall 2011	GEO
“Application of Pore Fluid Engineering for Improving the Hydraulic Performance of Granular Soils”			
Wing Shun Kwan	CAEE	n/a	GEO
“Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation”			

Supervisor, MS Theses/Reports

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Michael Stromberg	CAEE	Summer 2012	GEO
“Commissioning of the Multi-Use Static/Dynamic Large-Scale Soil Testing Table”			
Mai El Khattab	CAEE	Spring 2013	GEO
“Stability of bentonite suspensions within porous media”			

Co-Supervisor, PhD Dissertations

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Mustafa B. Erten	CAEE	Spring 2012	GEO
“Geotechnical Containment of Sediments Contaminated with Non-Aqueous Phase Liquid”			

Chadi El Mohtar

Faculty Activity Reports

Member PhD Committees

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Sara Navidi	CAEE	Spring 2012	GEO
"Development of Site Amplification Model for Use in Ground Motion Prediction Equations"			
Matthew Thad LeBlanc	Civil Engineering	n/a	GEO
Mahdi Heidari Mogdaham	Civil Engineering	n/a	GEO
Menzer Pehlivan	Civil Engineering	n/a	GEO
Sriramya Nair	Civil Engineering	n/a	STR
Chang Min Jung	Petroleum Engineering	n/a	

Reader, MS Committees

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Ioannis Tsiapas	CAEE	Spring 2012	GEO
"Pore Pressure Response Of Liquefiable Soil Treated With Prefabricated Vertical Drains: Experimental Observations With Numerical Predictions"			

C. OTHER RESEARCH SUPERVISION**Undergraduate Students Supervision**

STUDENT	DEPARTMENT	Semester	AREA
Edward Jaimes	Civil Engineering	Spring 2012	GEO
Abdallah Najdi (visiting from American University of Beirut)	Civil Engineering	Summer 2012	GEO
Mohamad Melhem (visiting from American University of Beirut)	Civil Engineering	Summer 2012	GEO

D. ADDITIONAL TEACHING ACTIVITIES

Lecture in CE 301 on Geotechnical Engineering on Feb. 13th, 2012.

Part 2: Administrative and Committee Assignments

A. ADMINISTRATIVE POSITIONS

- Distinguished Lecture Series
- Graduate Curricula and Policies Committee
- Graduate recruiting-in charge of campus visit for prospective students

B. UNIVERSITY COMMITTEES**University****School****Department**

- Geotechnical Engineering faculty hiring committee
- Advisor, Geo-Institute graduate students chapter
- Organizer: Lymon C. Reese Memorial Golf Tournament (in association with the Reese Lecture)
- Organizer: Explore UT Geotechnical Engineering Activities

C. OUTSIDE COMMITTEES**International**

National

- ASCE- Grouting Committee (member)
- ASCE- Soil Properties and Modeling (member)
- ASTM D18- Soil and Rock Committee
- ASTM D18.09- Cyclic and Dynamic Properties of Soils (Secretary)

State

Part 3: Contributions to Technology

A. REFEREED ARCHIVAL JOURNALS**Published:**

- Erten, M., Gilbert, B., El Mohtar, C. and Reible, D. "Development of a laboratory procedure to evaluate the consolidation potential of soft contaminated sediments," ASTM Geotechnical Testing Journal: Innovations in Characterizing the Mechanical and Hydrological Properties of Unsaturated Soils, Vol 34 Issue 5, September 2011.
- El Mohtar, C. S. and Rugg, D. "New Three-Way Split Mold Design and Experimental Procedure for Testing Soft, Grouted Soils," ASTM Geotechnical Testing Journal, Vol 34 Issue 6, pp. 365-371, November 2011.

Accepted:

- Mustafa B. Erten, Danny D. Reible, Robert B. Gilbert, Chadi S. El Mohtar "The Performance of Organophilic Clay on NAPL Contaminated Sediments under Anisotropic Consolidation," Journal of ASTM International
- Yoon, J. and El Mohtar, C. S. "Disturbance effect on yield stress measurement of bentonite suspension," ASTM Geotechnical Testing Journal.

Submitted:

- C. S. El Mohtar, A. Bobet, M.C. Santagata, V.P. Drnevich, C. Johnston "Liquefaction Mitigation using Bentonite Suspensions," ASCE Journal of Geotechnical and Geoenvironmental Engineering.
- Yoon, J. and El Mohtar, C. S. "Rheological properties of bentonite suspension modified with sodium pyrophosphate for geotechnical applications," Applied Clay Science.
- Yoon, J., Hwang, H. and El Mohtar, C. S. "The Effect of Initial Hydration on Hydraulic conductivity of Sand-Bentonite Mixtures (SBMs)" ASTM Geotechnical Testing Journal.
- Yoon, J. and El Mohtar, C. S. "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" Tunneling and Underground Construction Journal.
- El Mohtar, C. S., Drnevich, V. P., Santagata, M. C. and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Undrained Shear Modulus Reduction of Sand with Plastic Fines" ASTM Geotechnical Testing Journal.
- Yoon, J. and El Mohtar, C. S. "Hydraulic Conductivity of sands and silty sands grouted with modified bentonite suspensions," ASCE Journal of Geotechnical and Geoenvironmental Engineering.

B. REFEREED CONFERENCE PROCEEDINGS

- J.S. Yoon and C.S. El Mohtar. "Time dependent rheological behavior of modified bentonite suspensions," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.
- Mustafa B. Erten, Chadi S. El Mohtar, Danny D. Reible, Robert B. Gilbert. "Consolidation Properties of NAPL Contaminated Sediments," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.

C. NON-REFEREED PAPERS

- J. S. Yoon and C. S. El Mohtar. "Groutability of clean sand with sodium pyrophosphate modified bentonite suspensions," IS-GI Brussels 2012: Recent Research, Advances and Execution Aspects of Ground Improvement Works, ISSMGE TC 211 conference, Brussels, Belgium, 30 May- 1 June, 2012

Chadi El Mohtar

Faculty Activity Reports

- El Mohtar, C.S., Drnevich, V.P., Santagata, M., and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Shear Modulus of Sand with Plastic Fines," ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.

D. BOOKS AUTHORED/CO-AUTHORED**E. BOOKS EDITED/CO-EDITED****F. BOOKS CHAPTERS****G. BOUND TECHNICAL REPORTS****H. ORAL PRESENTATIONS**

- J.S. Yoon and C.S. El Mohtar. "Time dependent rheological behavior of modified bentonite suspensions," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.
- Mustafa B. Erten, Chadi S. El Mohtar, Danny D. Reible, Robert B. Gilbert. "Consolidation Properties of NAPL Contaminated Sediments," GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012.
- "Geotechnical Research at the University of Texas", CAEE Undergraduate Advisory Board's 1st research Forum, April 12, 2012
- Chadi S. El Mohtar, Vincent P. Drnevich, Marika Santagata and Antonio Bobet. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Shear Modulus of Sand with Plastic Fines," ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.
- Mustafa B. Erten, Chadi S. El Mohtar, Danny D. Reible, Robert B. Gilbert. "Consolidation Properties of NAPL Contaminated Sediments," ASTM D18 DTJ workshop on unsaturated soils: Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments, San Diego, CA, June 25, 2012.

I. PATENTS**J. COPYRIGHTED SOFTWARE**

Part 4: Research Activities/Grants & Contracts

A. NEW PROJECTS FUNDED-INDIVIDUAL**B. NEW PROJECTS FUNDED—JOINT**

Project Title:	Long-Term Performance of Drilled Shaft Retaining Walls (Continuation)
Sponsor:	Texas Department of Transportation
Principal Investigator:	Robert Gilbert
Co-Principal Investigators:	Jorge Zornberg and Chadi El Mohtar
Reporting Center:	GEC\CTR
Begin/End Dates:	September 1, 2009 - August 31, 2012
Total Award:	149,721
Total Award (Your Share):	49,907
Budget for 11-12 (total)- (Total):	0
Budget for 11-12(Your Share):	0
Expended in 11-12(Your Share):	0

Chadi El Mohtar

Faculty Activity Reports

C. CONTINUING PROJECTS—INDIVIDUAL**D. CONTINUING PROJECTS—JOINT**

Project Title:	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation
Sponsor:	NSF/NEESR/subcontract from U. of Washington
Principal Investigator:	Chadi El Mohtar
Co-Principal Investigators:	Ellen Rathje
Reporting Center:	GEC/OSP
Begin/End Dates:	September 1 st , 2010 – August 31 st , 2012
Total Award:	638,327.00
Total Award(Your Share):	166,732.00
Budget for 11-12(Total):	92,642.00
Budget for 11-12(Your Share):	92,642.00
Expended in 11-12(Your Share):	92,642.00

Project Title:	Long-Term Performance of Drilled Shaft Retaining Walls (Continuation)
Sponsor:	Texas Department of Transportation
Principal Investigator:	Robert Gilbert
Co-Principal Investigators:	Jorge Zornberg and Chadi El Mohtar
Reporting Center:	GEC/CTR
Begin/End Dates:	September 1, 2009 - August 31, 2012
Total Award:	577,422
Total Award(Your Share):	192,474
Budget for 11-12(Total):	153,734
Budget for 11-12(Your Share):	51,245
Expended in 11-12(Your Share):	51,245

E. RESEARCH PROPOSALS SUBMITTED—INDIVIDUAL

Project Title:	CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous
Sponsor:	NSF
Reporting Center:	OSP/GEC
Begin/End Dates:	August 1, 2013 - July 31, 2018
Requested Budget (Total):	431,487
Proposal Status:	Under Review

Project Title:	Sodium PyroPhosphate Adsorption on Montmorillonite Surfaces: A Kinetic Study of Rheology and Nanostructure
Sponsor:	NSF
Reporting Center:	OSP/GEC
Begin/End Dates:	August 1, 2012 - July 31, 2014
Requested Budget (Total):	197,231
Proposal Status:	Rejected

Project Title:	NEESR: Liquefaction Remediation through Grouting- Enhanced Penetration and Evaluation with Vibroseises
Sponsor:	NSF/NEES
Reporting Center:	OSP/GEC
Begin/End Dates:	September 1, 2012 – August 31, 2015
Requested Budget (Total):	340,272
Proposal Status:	Rejected

Chadi El Mohtar

Faculty Activity Reports

Project Title:	Effects of aggregate fouling on resilient modulus, permanent deformations and shear strength: A feasibility study using large scale CSS Device
Sponsor:	NSF
Reporting Center:	OSP/GEC
Begin/End Dates:	August 15, 2012 – December 15, 2013
Requested Budget (Total):	101,870
Proposal Status:	Rejected

F. RESEARCH PROPOSALS SUBMITTED—JOINT

Project Title:	Improvement of Construction Quality Control by Using Intelligent Compaction Technology for Base and Soil
Sponsor:	Texas Department of Transportation
Principal Investigator:	Chadi El Mohtar
Co-Principal Investigators:	Kenneth Stokoe
Reporting Center:	CTR\GEC
Begin/End Dates:	August 1, 2012 – July 31, 2014
Requested Budget (Total):	497,199
Requested Budget (Your Share):	248,600
Proposal Status:	Rejected

Project Title:	Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test
Sponsor:	Texas Department of Transportation
Principal Investigator:	Robert Gilbert
Co-Principal Investigators:	Chadi El Mohtar
Reporting Center:	CTR\GEC
Begin/End Dates:	September 1, 2012 – August 31, 2014
Requested Budget (Total):	298,205
Requested Budget (Your Share):	149,102
Proposal Status:	Rejected

G. DESCRIPTION OF CURRENT SPONSORED RESEARCH

The first project seeks to provide insight into the distribution of lateral earth pressures below the ground surface in expansive clay soils, and into how the pressures are affected by moisture cycles causing shrinking and swelling of the expansive clay (Collaboration with Prof. Gilbert and Zornberg). A full-scale test wall is being constructed in Manor, Texas on a site underlain by approximately 50 feet of the Taylor Formation, a stiff, highly plastic clay. In order to estimate the lateral earth pressures and moisture content in the soil behind the test wall, the wall and retained soil are instrumented with optical strain gauges, inclinometers, and moisture sensors. This wall will be monitored for a period of at least two years. The motivation for this work is uncertainty in the design of drilled shaft retaining walls in expansive clay soils. The range of assumptions being used today in design practice can produce more than factor of two differences in the maximum bending moment in the shaft, which could lead to either excessively costly walls or under-designed walls. This work has already resulted in 1 Masters thesis and 1 conference paper.

The second project is oriented toward producing and interpreting experimental data that will help identify improved intensity measures for prediction of the initiation and effects of liquefaction (collaboration with Prof. Rathje). This work is part of a bigger proposal headed by Steven Kramer from University of Washington and will include running several centrifuge tests in which we will subject relatively simple models to many different (in amplitude, frequency content, duration, and phasing) ground motions and measure the pore pressure response. The centrifuge tests will be complemented by an extensive series of cyclic simple shear tests using loading histories selected to distinguish optimal intensity measures. The focus of the work here at UT will be on running the cyclic simple shear tests and analyzing the results. The data generated in this work will be used for

constitutive modeling of liquefiable soils. These results will provide support for a preexisting framework that allows the timing of liquefaction to be considered in predicting the effects of liquefaction.

H. DESCRIPTION OF CURRENT UNSPONSORED/DEPARTMENTAL RESEARCH

The current unsponsored research focuses on developing new smarter methods for improving soil and aggregate and aggregate performance in the field. The new approach focuses on engineering the soil pore fluid to achieve the desired enhanced performance as compared to the traditional approach where the soil structure is modified. This new approach focuses on introducing Rheology into Geotechnical engineering to allow for characterizing and describing the pore fluids used based on their engineering properties (Yield stress, elastic and viscous modulus, viscosity, ...) as compared to traditional volumetric and gravimetric measures (concentration of suspension, percentage of treatment to total mass). This new approach would allow for correlating the change of the soil on a macro scale to the changes in the properties of the pore fluid at the micro scale.

The first project focuses on using engineered bentonite grouts to improve the liquefaction resistance of loose saturated sands. During my Phd research, a lot of work was done on this topic with the "wished in place" bentonite. The current research focuses on permeating sand with the engineered bentonite suspensions and determines the change in the mechanical properties of the sand with the viscous fluid inside the pores. The research is currently focusing on determining the effects of the pore fluid on the static shear strength of sand using static triaxial testing. This work has already produced a Master's Thesis, 1 journal paper and 1 conference paper. A second journal paper is in the works.

The second project tackles on of the issue of levee failures. In the last 100 years, about 80% of levee failures occurred due to under seepage. Under seepage is the phenomenon where water starts flowing through an embedded sand layer under the levee and with the water level rising in the levee, the flow rate gets higher increasing the speed of water flow resulting in erosion of the sand layer and forming flow channels that grows bigger and finally causing a collapse of the soil above it including the levee. The current state of practice involves constructing a slurry wall through the levee and all the way down to the sand layer and beyond it. This approach was adapted because of lack of success with permeation grouting in the field. With the new engineered bentonite grouts, we can modify the bentonite grouts to allow it to permeate through the sand layer to form an impervious curtain wall that would prevent under seepage. The bentonite would be engineered to have lower initial viscosity to allow for penetration but then recovers the higher viscosity so that it remains in the sand and does not get flushed out. This work has already resulted in a PhD dissertation, 1 accepted journal paper and 3 accepted conference papers. Additional 4 journal papers were submitted on work extending from this topic but mostly focusing on suspension flow through porous media.

The third project studies the use of sand bentonite mixtures to replace clay liners in the field. The study focuses on the effects of the bentonite hydration (percentage and uniformity) on the overall hydraulic conductivity of the mixture. The work consists of preparing SBMs in different mixing methods that would result in providing upper and lower boundaries for the degree of bentonite hydration. These results could raise important concerns on the current field application and whether the field design might be under designing the liners if the field mixing is not thorough enough to ensure complete bentonite hydration. This work has already produced 1 Master's dissertation and 1 conference paper with an additional 1 journal paper submitted.

The forth project is constructing a mid-size shacking table that will allow for testing soil samples (with and without treatment) that are larger than the element testing (triaxial testing) but still smaller than large field scale testing. This would allow for a more realistic permeation modeling of the field process as compared to the permeation done for triaxial setups (horizontal grouting rather than vertical grouting). The final design is done and the shaking table has been commissioned with a series of preliminary tests performed to evaluate its performance. A Master's thesis has been submitted documenting the work.

The fifth project focuses on developing an understanding of NAPL processes in sedimenting and identifying conditions under which a sediment cap may provide adequate containment (collaboration with Prof. Reible and Gilbert). An experimental protocol is being developed to assess the mobility of NAPL in sediments when they consolidate under the weight of a cap. In the first year of the project, work has been focused on developing the experimental procedure to evaluate the consolidation behavior of soft and compressible sediments. Specimens representative of sediments are being artificially created in the laboratory by mixing clay minerals with water

and oil mixtures. A variety of modifications to standard triaxial testing equipment and procedures have been necessary to achieve the goal of precise and accurate results with the low effective stresses and high compressibility involved. The results to date provide a controlled baseline to assess factors that control NAPL migration. This work has already produced 1 Masters Thesis, 1 PhD dissertation, 1 published journal paper, 1 accepted journal paper, and 2 conference papers. 3 more journal papers are being prepared.

The sixth project is still in the design/discussions phase. The work is a collaboration with Prof. Bhasin on developing a railroad research program at UT. The program will build on the testing capabilities with the shaking table discussed earlier to develop a railroad model testing facility along with the ballast testing capabilities that will provide UT with new capability to investigate the railroad structure performance under various loading conditions. The project is currently in the early stages of discussions with the interested parties from FRA and the major railroad companies to establish the necessary connections for collaboration and funding.

Part 5: Professional Development

A. Short Courses

B. Workshops

- ASTM D18 DTJ workshop on unsaturated soils: Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments, San Diego, CA, June 25, 2012.
- ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.

C. Technical Conferences

- GeoCongress 2012: State of the Art and Practice in Geotechnical Engineering, Oakland, CA, March 25-29, 2012

D. Meetings

- ASCE Soil Properties and modeling committee meeting in Oakland, CA, March 26, 2011
- ASTM D18.09 committee meeting via web conference, January 30, 2012
- ASTM D18.09 committee meetings in San Diego, California, June 25 – 29, 2012

Part 6: Engineering Recognition

A. AWARDS & HONORS

B. LISTINGS

Part 7: Professional Community Service

- Reviewer, ASTM Geotechnical Testing Journal, 2012
- Reviewer, NSF proposal review panel, December, 2011

Part 8: Professional Experience

A. PROFESSIONAL REGISTRATION

Current: Licensed Civil Engineer, Syndicate of Engineers and Architects, Beirut, Lebanon,

Chadi El Mohtar

Faculty Activity Reports

Department of Civil, Architectural and Environmental Engineering			
Name:	Chadi El Mohtar		Academic Year Ending: 31 Aug 12
Rank:	Assistant Professor		Report Date:
Endowed Position			
PE Status (Texas):		Faculty Signature:	<i>Chadi El Mohtar</i>
WORK EXPERIENCE YEARS			
Years in Rank at UT:	4	Years Teaching Experience:	4
		Years Other Experience:	0
GRADUATE STUDENT SUPERVISION (*In UT career total only, count each co-supervised student as 0.5)			
M.S. in Progress:	11-12	M.S. Graduated:	11-12
# of students supervised:	2	# of students supervised:	1
# of students co-supervised:	0	# of students co-supervised:	0
Ph.D. in Progress:	—	Ph.D. Graduated:	—
# of students supervised:	2	# of students supervised:	1
# of students co-supervised:	1	# of students co-supervised:	1
		UT CAREER TOTAL *	
		MS Graduated: 4.5	
		PhD Graduated: 1.5	
TEACHING			
Teaching Evaluations			
Semester	Course Number	Instructor Rating	Course Rating
Fall	CE 357	4.7	4.2
	CE 387L	3.6	3.4
Spring	CE 375	4.6	4.3
CONTRIBUTIONS TO TECHNOLOGY			
Already in Print	11-12	CAREER TOTAL	
Refereed Archival Journals:	2	4	
Refereed Conference Proceedings:	2	11	
Non- Refereed Publications:	2	4	
Books Authored or Co-Authored:	0	0	
Books Edited or Co-Edited:	0	0	
Book Chapters Authored or Co-Authored:	0	0	
Oral Presentations:	5	20	
Patents:	0	0	
Copyrighted Software Packages:	0	0	
GRANTS AND CONTRACTS			
	11-12 Only	SIX-YEAR TOTAL (06-12)	
Number of Projects (New and Continuing):	2	8	
Total Awarded to all Projects: \$(K's) (new & continuing)	\$149K	\$950K	
Your Share Awarded: \$(K's) (new & continuing)	\$50K	\$440K	
Your Share Spent:	\$144K	-----	

Chadi El Mohtar

Faculty Activity Reports

Chadi El Mohtar

Assistant Professor

Civil, Architectural and Environmental Engineering

COMMITTEES in 11-12

	<u>MEMBER</u>	<u>CHAIR</u>
UT Department and School:	3	0
All University:	0	0
Professional and Technical:	3	0

ENGINEERING RECOGNITION IN 11-12**FACULTY PARTICIPATION IN ACADEMIC EVENTS IN 11-12**

Participated in the following academic events:

- Cockrell School of Engineering, Graduation Ceremony, December 2011
- Advisor: GeoInstitute graduate student chapter
- Organizer (along with GeoInstitute officers) of the Lyman C. Reese Golf Scramble that raised over 2000\$ for the student chapter
- Presented Geotechnical engineering to CE 301 students
- Presented Geotechnical research at UT to the ASCE Undergraduate Advisory Board first research forum

HIGHLIGHTS OF INDIVIDUAL ACCOMPLISHMENTS FOR 11-12

- Attended Reese lecture entitled: "Interaction between Geotechnical and Structural Engineers" by Dr. John Burland.
- Attended the GeoCongress conference in Oakland, CA (March, 2012) where I was the co-author on two papers (both were selected for oral presentations).
- Attended ASCE Soil properties and modeling committee in Oakland, CA (March, 2012).
- Attended ASTM committee meetings in San Diego, CA (June, 2012).
- Attended and presented at the ASTM D18 DTJ workshop on unsaturated soils: Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments, San Diego, CA, June 25, 2012.
- Attended and presented at the ASTM Symposium on Dynamic Testing of Soil and Rock: Field and Laboratory, San Diego, CA, June 28-29, 2012.
- Submitted a total of 6 proposals: 2 TxDOT proposals, 1 NEESR proposal, 2 NSF proposals and the CAREER proposal.
- submitted a "White paper" proposal with Amit Bhasin to both, FRA and BNSF, on quantifying ballast integrity in railroads. Working on establishing a railroad research facility at UT with Prof. Bhasin.
- Had 2 journal papers published, another 2 journal papers accepted and 6 journal papers submitted a total of 5 journal papers.
- Participated in NSF proposal review panel (December 2011).

Chadi El Mohtar

Faculty Activity Reports

Faculty Annual Report for Year End August 31, 2013

Chadi El Mohtar, Ph.D.**Assistant Professor****Civil, Architectural, and Environmental Engineering Department**Signature: 

11/20/14

Part 1: Teaching Activities**A. COURSES TAUGHT:**

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. SECTIONS/STUDENTS
Fall 2012	CE 387L1	Consolidation/shearing properties of soils	1 24
Spring 2013	CE 357	Geotechnical Engineering	6 45

Individual Instructions

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. SECTIONS/STUDENTS
Fall 2012	CE 397S	14- Master's Research	1
Fall 2012	CE 397S	15-Dissertation Research	1
Spring 2013	CE 397S	14- Master's Research	1
Spring 2013	CE 397S	15-Dissertation Research	1
Spring 2013	CE 698B	Thesis	1
Summer 2013	CE 397S	15-Dissertation Research	1
Summer 2013	CE 397S	14- Master's Research	1
Summer 2013	CE 397S	15-Dissertation Research	1

B. GRADUATE STUDENT RESEARCH**Supervisor, PhD Dissertations**

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Wing Shun Kwan	CAEE	May 2015	GEO
"Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation"			
Ritika Sangroya	CAEE	May 2016	GEO
"Groutability of soils"			

Supervisor, MS Theses/Reports

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Mai El Khattab	CAEE	Spring 2013	GEO
"Post-permeation Stability of Modified Bentonite Suspensions under Increasing Hydraulic Gradients"			
Amber Spears	CAEE	Spring 2014	GEO
"Hydraulic Conductivity of Bentonite Grouted Sands using Flexible Wall Test"			
Alex Brewster	CAEE	Spring 2015	GEO
"Effectiveness of Piezometers in fat clays"			

Member PhD Committees

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Andrew Brown	CAEE	08/2013	GEO
"The Behavior of Drilled Shaft Retaining Walls in Expansive Clay Soils"			
Matthew LeBlanc	CAEE	08/2013	GEO
"Field Measurement of the Linear and Nonlinear constrained moduli of granular soil"			
Sriramya Nair	CAEE	08/2013	Materials
"Adaptive Performance of Cement-based Materials Using a Magnetorheological Approach"			
Wardah Azhar	CAEE	N/A	EWRE

Chadi El Mohtar

Faculty Activity Reports

"Equilibrium Isotherms and Expected Cap and In-Situ Treatment Modeling"			
Ching-Hsiang Chen	CAEE	N/A	GEO
"Performance of Suction Can Foundation with Small L/D ratio"			
Chang Min Jung	PGE	N/A	
"Interaction of Organic Rich Shales with Water-Based Fluids"			
Mahdi Heidari Moghadam	CAEE	N/A	GEO
"Time Dependent analysis of Jet-Grouted tunnels in difficult ground conditions"			
Oscar Suncar	CAEE	N/A	GEO
"Monitoring Time-Dependent Landslide Deformations from Satellite Remote Sensing"			

C. OTHER RESEARCH SUPERVISION**Undergraduate Students Supervision**

STUDENT	DEPARTMENT	Semester	AREA
Christian Hogan	Civil Engineering	Spring 2013	GEO
Patricia Bennett	Civil Engineering	Summer 2013	GEO
Hamza Jaffal (visiting from American University of Beirut)	Civil Engineering	Summer 2013	GEO
Ali Melhem (visiting from American University of Beirut)	Civil Engineering	Summer 2013	GEO

D. ADDITIONAL TEACHING ACTIVITIES

Part 2: Administrative And Committee Assignments

A. ADMINISTRATIVE COMMITTEES

- Distinguished Lecture Series
- Graduate Curricula and Policies Committee
- Graduate admission coordinator for Geotech Group

B. UNIVERSITY COMMITTEES

University

College

Department

- Geotechnical Engineering faculty hiring committee
- Advisor, Geo-Institute graduate students chapter
- Organizer: Lymon C. Reese Memorial Golf Tournament (in association with the Reese Lecture)
- Organizer: Explore UT Geotechnical Engineering Activities

C. OUTSIDE COMMITTEES**International****National**

- Member, ASCE Grouting Committee (Geo-Institute)
- Member, ASCE Soil Properties and Modeling committee
- Member, ASTM D 18: Soil and Rock Committee
- Secretary, ASTM D18.09: Cyclic and Dynamic Properties of Soil
- Task Group Chairman: ASTM WK38054, Cyclic Simple Shear Test with load Control and with Displacement Control

- Co-Chair GeoCongress 2014 session: Hydrocarbon Bearing Geomaterials for Sustainable Energy Production

State

Part 3: Contributions to Technology

A. REFEREED ARCHIVAL JOURNALS**In Print**

- Mustafa B. Erten, Danny D. Reible, Robert B. Gilbert, Chadi S. El Mohtar "The Performance of Organophilic Clay on NAPL Contaminated Sediments under Anisotropic Consolidation," Journal of ASTM International STP 1554, Vol. 5, Restoration fo Aquatic Environment, Nov. 2012, **DOI:** 10.1520/STP104214.
- Yoon, J. and El Mohtar, C. S. "Disturbance effect on yield stress measurement of bentonite suspension," ASTM Geotechnical Testing Journal, Vol. 36, No.1, 2013 (January).
- El Mohtar, C. S., Drnevich, V. P., Santagata, M. C. and Bobet, A. "Combined Resonant Column and Cyclic Triaxial Tests for Measuring Undrained Shear Modulus Reduction of Sand with Plastic Fines" ASTM Geotechnical Testing Journal, Vol. 36, No. 4, 2013 (July).
- C. S. El Mohtar, A. Bobet, M.C. Santagata, V.P. Drnevich, C. Johnston "Liquefaction Mitigation using Bentonite Suspensions," Journal of Geotechnical and Geoenvironmental Engineering, Vol. 139, No. 8, August, 2013. ©ASCE, p.p. 1369–1380.
- Yoon, J. and El Mohtar, C. S. "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" Tunneling and Underground Construction Journal, Vol. 37 p.p. 135–145 (August 2013)

Accepted

- Yoon, J. and El Mohtar, C. S. "Dynamic rheological properties of sodium pyrophosphate modified bentonite suspensions for liquefaction mitigation" Clays and Clay Mineralogy, Volume 61, No. 4, 319-327, 2013 (October)
- El Mohtar, C. S., Drnevich, V. P., Santagata, M. C. and Bobet, A. "Pore pressure generation in Sand with Plastic Fines" Geotechnique. (Author proof finalized).
- Yoon, J. and El Mohtar, C. S. "Evaluation of time-dependent yield stress using dynamic rheological property of bentonite suspensions" ASTM Geotechnical Testing Journal (Author proof finalized)

Under Review

- Yoon, J. and El Mohtar, C. S. "Groutability of Granular Soils using Bentonite Grout based on Filtration Model" Transport in Porous Media (Second Review)
- Mariika Santagata, Julia P. Clarke, Antonio Bobet, Vince P. Drnevich, Chadi S. El Mohtar, Pao-Tsung Huang and Cliff T. Johnston. "Rheology of concentrated bentonite suspensions treated with sodium pyrophosphate for application in mitigating earthquake induced liquefaction" Applied Clays Science (submitted January 2013).

B. REFEREED CONFERENCE PROCEEDINGS**C. NON-REFEREED PAPERS**

- Mustafa B. Erten, Danny D. Reible, Chadi S. El Mohtar and Robert B. Gilbert. "The Behavior Organophilic Clay as an In Situ Cap on Nonaqueous Phase Liquid Contaminated Sediments" 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013.
- M. Khattab, J.S. Yoon and C.S. El Mohtar. "Prediction of Penetration Length of Bentonite Slurry in Soil-Bentonite Slurry walls" 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013.
- Betak, J. F., Bhasin, A. and El Mohtar, C.S. "The railroad Engineering Sustainability Lifecycle," 100th ASLRRA Annual Meeting, Atlanta, Georgia, April 28-30, 2013.

D. BOOKS AUTHORED/CO-AUTHORED**E. BOOKS EDITED/CO-EDITED**

F. BOOKS CHAPTERS**G. BOUND TECHNICAL REPORTS****H. ORAL PRESENTATIONS**

- El Mohtar, Chadi, "Career in Academia: First-hand experience" Talk to the Geo-Institute Graduate student chapter at Purdue University (Web-talk).
- Mustafa B. Erten, Danny D. Reible, Chadi S. El Mohtar and Robert B. Gilbert. "The Behavior Organophilic Clay as an In Situ Cap on Nonaqueous Phase Liquid Contaminated Sediments" 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013.
- M. Khattab, J.S. Yoon and C.S. El Mohtar. "Prediction of Penetration Length of Bentonite Slurry in Soil-Bentonite Slurry walls" 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013 (Poster Presentation)
- El Mohtar, Chadi. "Geotechnical Research at the University of Texas", CAEE Undergraduate Advisory Board's 2nd research Forum, March 26, 201.
- El Mohtar, Chadi, "Overview of Prof. El Mohtar research at UT", Talk to Student Engineering Council as part of Research Symposium week April 17th, 2013
- Betak, J. F., Bhasin, A. and El Mohtar, C.S. "The railroad Engineering Sustainability Lifecycle" 100th ASLRRA Annual Meeting, Atlanta, Georgia, April 28-30, 2013.

I. PATENTS**J. COPYRIGHTED SOFTWARE**

Part 4: Research Activities/Grants & Contracts

A. NEW PROJECTS FUNDED-INDIVIDUAL

Project Title:	CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media
Sponsor:	NSF
Begin/End Dates:	Dec 1, 2012 - Nov 31, 2017
Requested Budget (Total):	400,000.00
Budget for 12-13:	51,158.47
Expended for 12-13:	51,158.47
Reporting Center	OSP

Project Title:	Measuring Shear Strength of Soft limestone rocks using DST
Sponsor:	Freese and Nichols Inc.
Begin/End Dates:	June 2013 – July 2013
Requested Budget (Total):	9,200.00
Budget for 12-13:	9,200.00
Reporting Center	GEC

B. NEW PROJECTS FUNDED—JOINT

Project Title:	Geotechnical Investigation of Gowanus Canal Sediments: NAPL Expression
Sponsor:	GEI Consultants
Principal Investigator:	Danny Reible
Co-Principal Investigators:	Chadi El Mohtar
Begin/End Dates:	Oct, 2012 – Feb, 2013
Total Award:	12,600.00
Total Award(Your Share):	6,300.00
Budget for 12-13(Total):	12,600.00

Chadi El Mohtar

Faculty Activity Reports

Budget for 12-13(Your Share):	6,300.00
Expended in 12-13(Your Share):	6,300.00
Reporting Center:	EWRE

C. CONTINUING PROJECTS—INDIVIDUAL**D. CONTINUING PROJECTS—JOINT**

Project Title:	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation
Sponsor:	NSF/NEESR
Principal Investigator:	Steven Kramer (U. of Washington)
Co-Principal Investigators:	Chadi El Mohtar, Ellen Rathje, Matthew Kuhn (U. of Portland)
Begin/End Dates:	Oct. 1, 2009 – Sept 30, 2013
Total Award:	638,327.00
Total Award(Your Share):	166,732.00
Budget for 12-13(Total):	37,809.00
Budget for 12-13(Your Share):	37,809.00
Expended in 12-13(Your Share):	37,809.00
Reporting Center	OSP

Project Title:	Long-Term Performance of Drilled Shaft Retaining Walls (Continuation)
Sponsor:	TxDOT
Principal Investigator:	Robert Gilbert
Co-Principal Investigators:	Chadi El Mohtar, Jorge Zornberg
Begin/End Dates:	Sept. 1, 2012 – Aug. 31, 2013
Total Award:	149,721.00
Total Award(Your Share):	49,907.00
Budget for 12-13(Total):	149,721.00
Budget for 12-13(Your Share):	49,907.00
Expended in 12-13(Your Share):	49,907.00
Reporting Center	CTR

E. RESEARCH PROPOSALS SUBMITTED—INDIVIDUAL

Project Title:	Evaluating Liquefaction Susceptibility through Predicting Excess Pore Pressure Generation from Ground Motions
Sponsor:	USGG
Begin/End Dates:	Jan 15, 2014 – Jan. 14, 2015
Requested Budget (Total):	80,156.00
Proposal Status:	Under Review
Reporting Center:	GEC/OSP

F. RESEARCH PROPOSALS SUBMITTED—JOINT

Project Title:	Infilling of Scour Holes After a Flood
Sponsor:	TxDOT
Principal Investigator:	Jinying Zhu
Co-Principal Investigators:	Chadi El Mohtar
Begin/End Dates:	Sept 1, 2013 – Aug. 31, 2014
Requested Budget (Total):	143,533.00
Proposal Status:	Under Review
Reporting Center:	CTR

G. DESCRIPTION OF CURRENT SPONSORED RESEARCH

The Long-Term Performance of Drilled Shaft Retaining Walls project seeks to provide insight into the distribution of lateral earth pressures below the ground surface in expansive clay soils, and into how the pressures are affected by moisture cycles causing shrinking and swelling of the expansive clay (Collaboration with Prof. Gilbert and Zomberg). A full-scale test wall is being constructed in Manor, Texas on a site underlain by approximately 50 feet of the Taylor Formation, a stiff, highly plastic clay. In order to estimate the lateral earth pressures and moisture content in the soil behind the test wall, the wall and retained soil are instrumented with optical strain gauges, inclinometers, and moisture sensors. This wall will be monitored for a period of at least two years. The motivation for this work is uncertainty in the design of drilled shaft retaining walls in expansive clay soils. The range of assumptions being used today in design practice can produce more than factor of two differences in the maximum bending moment in the shaft, which could lead to either excessively costly walls or under-designed walls. This work has already resulted in 1 Masters thesis and 1 conference paper.

The NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation project is oriented toward producing and interpreting experimental data that will help identify improved intensity measures for prediction of the initiation and effects of liquefaction (collaboration with Prof. Rathje). This work is part of a bigger proposal headed by Steven Kramer from University of Washington and will include running several centrifuge tests in which we will subject relatively simple models to many different (in amplitude, frequency content, duration, and phasing) ground motions and measure the pore pressure response. The centrifuge tests will be complemented by an extensive series of cyclic simple shear tests using loading histories selected to distinguish optimal intensity measures. The focus of the work here at UT will be on running the cyclic simple shear tests and analyzing the results. The data generated in this work will be used for constitutive modeling of liquefiable soils. These results will provide support for a preexisting framework that allows the timing of liquefaction to be considered in predicting the effects of liquefaction. 2 conference papers have been accepted from this work.

The CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media project tackles the limitations in the current state of practice in ground grouting. The current practice is mainly based on field experience and rules of thumb without much theoretical background on flow of viscous suspensions through porous media. One particular application where permeation grouting could be a very practical solution is levee failures. In the last 100 years, about 80% of levee failures occurred due to under seepage. Under seepage is the phenomenon where water starts flowing through an embedded sand layer under the levee and with the water level rising in the levee, the flow rate gets higher increasing the speed of water flow resulting in erosion of the sand layer and forming flow channels that grows bigger and finally causing a collapse of the soil above it including the levee. The current state of practice involves constructing a slurry wall through the levee and all the way down to the sand layer and beyond it. This approach was adapted because of lack of success with permeation grouting in the field. With the new engineered bentonite grouts, we can modify the bentonite grouts to allow it to permeate through the sand layer to form an impervious curtain wall that would prevent under seepage. The bentonite would be engineered to have lower initial viscosity to allow for penetration but then recovers the higher viscosity so that it remains in the sand and does not get flushed out. This work has already resulted in a PhD dissertation, a Master's thesis, 4 accepted journal paper and 3 accepted referred conference papers and 2 non-referred conference papers. An additional journal papers was submitted on work extending from this topic with 2 more papers in preparation.

H. DESCRIPTION OF CURRENT UNSPONSORED/DEPARTMENTAL RESEARCH

The current unsponsored research focuses on developing new smarter methods for improving soil and aggregate and aggregate performance in the field. The new approach focuses on engineering the soil pore fluid to achieve the desired enhanced performance as compared to the traditional approach where the soil structure is modified. This new approach focuses on introducing Rheology into Geotechnical engineering to allow for characterizing and describing the pore fluids used based on their engineering properties (Yield stress, elastic and viscous modulus, viscosity, ...) as compared to traditional volumetric and gravimetric measures (concentration of suspension, percentage of treatment to total mass). This new approach would allow for correlating the change of the soil on a macro scale to the changes in the properties of the pore fluid at the micro scale.

The first project focuses on using engineered bentonite grouts to improve the liquefaction resistance of loose saturated sands. During my Phd research, a lot of work was done on this topic with the "wished in place" bentonite. The current research focuses on permeating sand with the engineered bentonite suspensions and

determines the change in the mechanical properties of the sand with the viscous fluid inside the pores. The research is currently focusing on determining the effects of the pore fluid on the static shear strength of sand using static triaxial testing. This work has already produced a Master's Thesis, 1 journal paper and 1 conference paper. A second journal paper is in the works.

The second project studies the use of sand bentonite mixtures to replace clay liners in the field. The study focuses on the effects of the bentonite hydration (percentage and uniformity) on the overall hydraulic conductivity of the mixture. The work consists of preparing SBMs in different mixing methods that would result in providing upper and lower boundaries for the degree of bentonite hydration. These results could raise important concerns on the current field application and whether the field design might be under designing the liners if the field mixing is not thorough enough to ensure complete bentonite hydration. This work has already produced 1 Master's dissertation and 1 conference paper with an additional 1 journal paper submitted.

The third project is constructing a mid-size shaking table that will allow for testing soil samples (with and without treatment) that are larger than the element testing (triaxial testing) but still smaller than large field scale testing. This would allow for a more realistic permeation modeling of the field process as compared to the permeation done for triaxial setups (horizontal grouting rather than vertical grouting). The final design is done and the shaking table has been commissioned with a series of preliminary tests performed to evaluate its performance. A Master's thesis has been submitted documenting the work.

The forth project focuses on developing an understanding of NAPL processes in sedimenting and identifying conditions under which a sediment cap may provide adequate containment (collaboration with Prof. Reible and Gilbert). An experimental protocol is being developed to assess the mobility of NAPL in sediments when they consolidate under the weight of a cap. In the first year of the project, work has been focused on developing the experimental procedure to evaluate the consolidation behavior of soft and compressible sediments. Specimens representative of sediments are being artificially created in the laboratory by mixing clay minerals with water and oil mixtures. A variety of modifications to standard triaxial testing equipment and procedures have been necessary to achieve the goal of precise and accurate results with the low effective stresses and high compressibility involved. The results to date provide a controlled baseline to assess factors that control NAPL migration. This work has already produced 1 Masters Thesis, 1 PhD dissertation, 2 published journal papers, 2 referred conference papers and 2 non-referred conference papers. 3 more journal papers are being prepared.

The fifth project is still in the design/discussions phase. The work is a collaboration with Prof. Bhasin on developing a railroad research program at UT. The program will build on the testing capabilities with the shaking table discussed earlier to develop a railroad model testing facility along with the ballast testing capabilities that will provide UT with new capability to investigate the railroad structure performance under various loading conditions. The project is currently in the early stages of discussions with the interested parties from FRA and the major railroad companies to establish the necessary connections for collaboration and funding.

Part 5: Professional Development

A. Short Courses

B. Workshops

- Invited (along with Amit Bhasin) to a day-long workshop at BNSF Research and testing facilities in Topeka, Kansas to discuss the CAMRI railroad testing initiative at UT-Austin, June 13, 2013.
- Participated in Explore UT: Demonstration of a sinking building constructed on a liquefiable soil during an earthquake loading, March 2nd, 2013.

C. Technical Conferences

- 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013.
- 100th ASLRRA Annual Meeting, Atlanta, Georgia, April 28-30, 2013.

Chadi El Mohtar

Faculty Activity Reports

D. Meetings

- ASCE Soil Properties and modeling committee meeting via web conference, March 3, 2013
- ASTM D18.09 committee meeting via web conference, January 29, 2013
- ASTM D18.09 committee meetings in Indianapolis, Indiana, June 9-14, 2013

Part 6: Engineering Recognition

A. AWARDS & HONORS

- National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award
- Top Student paper for my graduate students (Mai Khattab and Jisuk Yoon) in the 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013

B. LISTINGS

Part 7: Professional Community Service

- Reviewer, ASTM Geotechnical Testing Journal
- Reviewer, ASCE Journal of Materials in Civil Engineering
- Reviewer, Soils and Foundations
- Ad hoc Reviewer, NSF proposal review panel, December 2012

Part 8: Professional Experience

A. PROFESSIONAL REGISTRATION

Current: Licensed Civil Engineer, Syndicate of Engineers and Architects, Beirut, Lebanon,

B. CONSULTING

(Number of Days, Company)

Chadi El Mohtar

Faculty Activity Reports

Department of Civil, Architectural and Environmental Engineering				
Name:	Chadi El Mohtar		Academic Year Ending:	31 Aug 2013
Rank:	Assistant Professor		Report Date:	
Endowed Position				
PE Status (Texas):			Faculty Signature:	<i>Shadi Mohtar</i>
WORK EXPERIENCE YEARS				
Years in Rank at UT:	5	Years Teaching Experience:	5	Years Other Experience:
GRADUATE STUDENT SUPERVISION (*In UT career total only, count each co-supervised student as 0.5)				
M.S. Students:	12-13	M.S. Graduated:	12-13	UT CAREER TOTAL *
# of students supervised:	2	# of students supervised:	1	
# of students co-supervised:	0	# of students co-supervised:	0	MS Graduated: 5.5
Ph.D. Students:	—	Ph.D. Graduated:	—	
# of students supervised:	2	# of students supervised:	0	PhD Graduated: 1.5
# of students co-supervised:	0	# of students co-supervised:	0	
TEACHING				
Teaching Evaluations				
Semester	Course Number	Number of Students	Instructor Rating	Course Rating
Fall	CE 387L1	24	3.8	3.8
Spring	CE 357	45	4.1	3.8
CONTRIBUTIONS TO TECHNOLOGY				
	12-13	CAREER TOTAL		
Refereed Archival Journals Papers in Print:	5	9		
Refereed Archival Journal Papers Under Review:	2	—		
Refereed Archival Journal Papers Under Review:	2	—		
Refereed Conference Proceedings:	0	11		
Nonrefereed Publications:	3	7		
Books Authored or Co-Authored:	0	0		
Books Edited or Co-Edited:	0	0		
Book Chapters Authored or Co-Authored:	0	0		
Oral Presentations:	6	26		
Patents:	0	0		
Copyrighted Software Packages:	0	0		
GRANTS AND CONTRACTS				
	12-13 Only	SIX-YEAR TOTAL (07-13)		
Number of Projects (New and Continuing):	5	11		
Total Awarded to all Projects: \$(K's) (new & continuing)	\$572K	\$1,521K		
Your Share Awarded: \$(K's) (new & continuing)	\$465K	\$906K		
Your Share Spent:	\$156K	-----		

Chadi El Mohtar

Faculty Activity Reports

Chadi El Mohtar

Assistant Professor

Civil, Architectural and Environmental Engineering

COMMITTEES in 12-13

	<u>MEMBER</u>	<u>CHAIR</u>
UT Department and College:	3	0
All University:	0	0
Professional and Technical (including subcommittees):	6	2

ENGINEERING RECOGNITION IN 12-13

- National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award

FACULTY PARTICIPATION IN ACADEMIC EVENTS IN 12-13

Participated in the following academic events:

- College of Engineering, Graduation Ceremony, May 2013
- Explore UT presentation
- Advisor, Geo-Institute Graduate Student Chapter
- Organizer (along with the G-I student chapter), Reese Memorial Golf tournament (day after The Reese Lecture)
- Presented Geotechnical research at UT to the ASCE Undergraduate Advisory Board Second research forum
- Presented "Prof. EL Mohtar Research" for the Student Engineering Council as part of Research Symposium week
- Presented "Career in Academia: First-hand experience" Talk to the Geo-Institute Graduate student chapter at Purdue University (Web-talk).
- Handled the admission and recruiting for the Geotechnical Engineering Group.

HIGHLIGHTS OF INDIVIDUAL ACCOMPLISHMENTS FOR 12-13

- Received National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award
- Top Student paper for my graduate students (Mai Khattab and Jisuk Yoon) in the 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013
- Published 5 journal papers, with 3 additional papers accepted and 2 still under review.
- Submitted a USGS proposal and a TxDOT proposal (With Jinying Zhu).
- Gave 3 talks to different student groups at UT and Purdue University.
- Attended the 100th ASLRRA Annual Meeting, Atlanta, Georgia, April 28-30, 2013 and the 7th International Conference on Remediation of Contaminated Sediments held in Dallas, February 4-7, 2013.
- Attended Reese lecture entitled: "Collapse Restoration and Design of Soil Structures Due to Recent Natural Disasters in Japan" by Dr. Fumio Tatsuoka.
- Had 2 service contracts for testing contaminated sediments and shear strength of soft rock.
- Co-Chair GeoCongress 2014 session: Hydrocarbon Bearing Geomaterials for Sustainable Energy Production
- Task Group Chairman: ASTM WK38054, Cyclic Simple Shear Test with load Control and with Displacement Control
- Was invited (along with Amit Bhasin) to a day-long workshop at BNSF Research and testing facilities in Topeka, Kansas to discuss the CAMRI railroad testing initiative at UT-Austin, June 13, 2013.
- Attended ASCE Soil Properties and modeling committee meeting via web conference, March 3, 2013
- Attended ASTM D18.09 committee meeting via web conference, January 29, 2013
- Attended ASTM D18.09 committee meetings in Indianapolis, Indiana, June 9-14, 2013
- Ad hoc Reviewer, NSF proposal review panel, December 2012
- Reviewer, ASTM Geotechnical Testing Journal, ASCE Journal of Materials in Civil Engineering, and Soils and Foundations
- Invited to write an article for GeoStrata (official magazine of the GeoInstitute). The article will come out in the Nov-Dec issue.

Chadi El Mohtar

Faculty Activity Reports

Faculty Annual Report for Year End August 31, 2014

Chadi El Mohtar, Ph.D.**Assistant Professor****Civil, Architectural, and Environmental Engineering Department**Signature: 

11/20/14

Part 1: Teaching Activities**A. COURSES TAUGHT:**

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. SECTIONS/STUDENTS
Fall 2013	CE 387L1	Consolidation/ shearing properties of soils	1 18
Fall 2013	CE 357	Geotechnical Engineering	5 55
Spring 2014	CE 357	Geotechnical Engineering	5 47

Individual Instructions

SEMESTER TAUGHT	COURSE NO.	COURSE NAME	NO. SECTIONS/STUDENTS
Fall 2013	CE 698A	Thesis	1
Fall 2013	CE 697S	15-Dissertation Research	1
Fall 2013	CE 377K	Studies in Civil Engineering	1
Spring 2014	CE 377K	Studies in Civil Engineering	1
Spring 2014	CE 697S	15-Dissertation Research	1
Spring 2014	CE 698B	Thesis	1
Summer 2014	CE 377K	Studies in Civil Engineering	1
Summer 2014	CE 377K	Studies in Civil Engineering	1

B. GRADUATE STUDENT RESEARCH**Supervisor, PhD Dissertations**

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Wing Shun Kwan	CAEE	May 2015	GEO
"Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation"			
Ritika Sangroya	CAEE	May 2016	GEO
"Groutability of heterogeneous soils"			

Supervisor, MS Theses/Reports

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Amber Spears	CAEE	Spring 2013	GEO
"Effect of Bentonite Swelling on Hydraulic Conductivity of Sand-Bentonite Mixtures (SBMs)"			
Alex Brewster	CAEE	Spring 2014	GEO
"Effectiveness of Piezometers in fat clays"			

Member PhD Committees

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Ching-Hsiang Chen	CAEE	12/2013	GEO
"Performance of Suction Can Foundation with Small L/D ratio"			
Mahdi Heidari Moghadam	CAEE	12/2013	GEO
"Time Dependent analysis of Jet-Grouted tunnels in difficult ground conditions"			
Chang Min Jung	PGE	N/A	
"Interaction of Organic Rich Shales with Water-Based Fluids"			
Wardah Azhar	CAEE	N/A	EWRE

Chadi El Mohtar

Faculty Activity Reports

"Equilibrium Isotherms and Expected Cap and In-Situ Treatment Modeling"			
Gore, Mathew	CAEE	N/A	GEO
"Geotechnical Characterization of Bauxite Residue for Reuse in Levees"			
Maryam Mirabolghasemi	PGE	N/A	
"Coupled Fluid and Particulate Flow Study for Improved Formation Damage Modeling"			
Marcelo Azevedo	CAEE	N/A	GEO
"Unsaturated hydraulic properties of geosynthetics"			
Oscar Suncar	CAEE	N/A	GEO
"Monitoring Time-Dependent Landslide Deformations from Satellite Remote Sensing"			
Bohyoung Lee	CAEE	N/A	GEO
"Dynamic Properties of Granular Soils with Non-plastic Fines"			

C. OTHER RESEARCH SUPERVISION

Undergraduate Students Supervision

STUDENT	DEPARTMENT	Semester	AREA
Patricia Bennett	Civil Engineering	Fall 2013	GEO
Patricia Bennett	Civil Engineering	Spring 2014	GEO
Osama ElQuqa	Civil Engineering	Spring 2014	GEO
Masaaki Ward	Civil Engineering	Summer 2014	GEO
Brian Landry	Civil Engineering	Summer 2014	GEO
Abigail Kugel	Civil Engineering	Summer 2014	GEO
Dany Hatoum (visiting from American University of Beirut)	Civil Engineering	Summer 2014	GEO

D. ADDITIONAL TEACHING ACTIVITIES

Part 2: Administrative And Committee Assignments

A. ADMINISTRATIVE COMMITTEES

- Distinguished Lecture Series
- Graduate Curricula and Policies Committee
- Graduate admission coordinator for Geotech Group

B. UNIVERSITY COMMITTEES

University

College

Department

- Geotechnical Engineering faculty hiring committee
- Advisor, Geo-Institute graduate students chapter
- Organizer: Lymon C. Reese Memorial Golf Tournament (in association with the Reese Lecture)
- Organizer: Explore UT Geotechnical Engineering Activities

C. OUTSIDE COMMITTEES

International

National

- Member, ASCE Grouting Committee (Geo-Institute)
- Member, ASCE Soil Properties and Modeling committee
- Member, ASTM D 18: Soil and Rock Committee
- Secretary, ASTM D18.09: Cyclic and Dynamic Properties of Soil
- Task Group Chairman: ASTM WK38054, Cyclic Simple Shear Test with load Control and with Displacement Control
- Co-Chair GeoCongress 2014 session: Hydrocarbon Bearing Geomaterials for Sustainable Energy Production
- Session Organizer, 2013 ASCE Texas Section Fall Conference and Centennial Celebration: Geotechnical Research at the University of Texas at Austin

State

Part 3: Contributions to Technology

A. REFEREED ARCHIVAL JOURNALS**In Print**

- Yoon, J. and El Mohtar, C. S. "Dynamic rheological properties of sodium pyrophosphate modified bentonite suspensions for liquefaction mitigation" *Clays and Clay Minerals*, Volume 61, No. 4, 319-327, October, 2013.
- Yoon, J. and El Mohtar, C. S. "Evaluation of time-dependent yield stress using dynamic rheological property of bentonite suspensions" *ASTM Geotechnical Testing Journal*, Vol. 37, No. 1, p.p. 85-93, January, 2014.
- El Mohtar, C. S., Drnevich, V. P., Santagata, M. C. and Bobet, A. "Pore pressure generation in Sand with Plastic Fines" *Geotechnique*. Volume 64, No. 2, pp. 108-117, February, 2014.
- Yoon, J. and El Mohtar, C. S. "Groutability of Granular Soils using Bentonite Grout based on Filtration Model" *Transport in Porous Media*. Volume 102, Issue 3, p.p. 365-385, February, 2014.
- Yoon, J. and El Mohtar, C.S. "Rheological properties of sodium pyrophosphate modified bentonite suspensions for seepage control" *Journal of Engineering Geology*, Vol. 179, p.p. 32-40, Sept. 2014.

Accepted

- Santagata, M.C., Clarke, J.P., Bobet, A., Drnevich, V.P., El Mohtar, C.S., Huang, P.T. and Johnston, C.T. "Rheology of concentrated bentonite suspensions treated with sodium pyrophosphate for application in mitigating earthquake induced liquefaction" *Applied Clays Science*, doi: 10.1016/j.clay.2014.05.017, Accepted May 2014.

Under Review

- El Mohtar, C. S., Yoon, J. and ElKhattab, M. "Penetration depth of bentonite grouts through granular soils" Tunneling and Underground Space Technology.
- Yoon, J. and El Mohtar, C. S. "A filtration model for evaluating maximum penetration distance of bentonite grout through granular soils" Journal of Computers and Geotechnics.

B. REFEREED CONFERENCE PROCEEDINGS

- Kwan, W.S. and El Mohtar, C.S. "Comparison between Shear Strength of dry Sand Measured in CSS device using Wire-reinforced membranes and Stacked Rings," ASCE Geotechnical Special Publications GSP-234, GeoCongress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, Feb. 23-26, 2014.
- Kwan, W.S., Sideras, S., El Mohtar, C.S., and Kramer, S. "Pore Pressure Generation under Different Transient Loading Histories", Proceedings of the 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014.

C. NON-REFEREED PAPERS

- Spears, A., Yoon, J., Hwang, H. and El Mohtar, C.S. "Effects of Bentonite Hydration and Uniformity on Hydraulic Conductivity of Sand-Bentonite Mixtures", National Society of Black Engineers (NSBE) 40th Annual Conventions, Nashville, TN, March 26-30, 2014.
- El Mohtar, C. S. "The Geoengineering of Contaminated Sediments", invited article to ASCE GeoStrata, Nov-Dec Issue, 2013.

D. BOOKS AUTHORED/CO-AUTHORED

E. BOOKS EDITED/CO-EDITED

F. BOOKS CHAPTERS

G. BOUND TECHNICAL REPORTS

- Brown, A., Dellinger, G., El Mohtar, C.S., Zornberg, J., and Gilbert, R.B. "The Long-Term Performance of a Drilled Shaft Retaining Wall in an Expansive Clay", Center of Transportation Research, Technical Report 0-6603-2, submitted to TxDOT, October 2013.

H. ORAL PRESENTATIONS

- Sangroya, R., El Mohtar, C.S., Yoon, J. and ElKhattab, M. "Applying Rheology to Enhance Grouting Prediction in Geotechnical Applications", 2013 ASCE Texas Section Fall Conference and Centennial Celebration, Dallas, Texas, Sept. 11-14, 2013
- Kwan, W.S., Kramer, S., Sideras, S., Rathje, E. and El Mohtar, C.S. "Pore Pressure Generation under Different Loading Histories", 2013 ASCE Texas Section Fall Conference and Centennial Celebration, Dallas, Texas, Sept. 11-14, 2013
- El Mohtar, C.S. "Grouting in Tunneling", Invited talk to CE 387S: Underground Construction, Austin, Texas, Dec. 4, 2013.
- Kwan, W.S., and El Mohtar, C.S. "Comparison between Shear Strength of dry Sand Measured in CSS device using Wire-reinforced membranes and Stacked Rings," GeoCongress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, GA, Feb. 23-26, 2014.

Chadi El Mohtar

Faculty Activity Reports

- El Mohtar, C.S., "Putting some engineering into our grouting practice", Invited talk at University of Texas, San Antonio, March 21, 2014.
- Spears, A., Yoon, J., Hwang, H. and El Mohtar, C.S. "Effects of Bentonite Hydration and Uniformity on Hydraulic Conductivity of Sand-Bentonite Mixtures", National Society of Black Engineers' 40th Annual Conventions, Nashville, TN, March 26-30, 2014.
- El Mohtar, C.S. "Engineering our Grouts", Invited talk at University of Washington, Seattle, WA, May 22, 2014.
- Kwan, W.S., Sideras, S., El Mohtar, C.S., and Kramer, S. "Pore Pressure Generation under Different Transient Loading Histories", Proceedings of the 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014.

I. PATENTS**J. COPYRIGHTED SOFTWARE**

Part 4: Research Activities/Grants & Contracts

A. NEW PROJECTS FUNDED-INDIVIDUAL

Project Title:	REU Supplement: CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media
Sponsor:	NSF
Begin/End Dates:	Jan. 1, 2014 – Aug. 31, 2014
Requested Budget (Total):	10,000.00
Budget for 12-13:	10,000.00
Expended for 12-13:	10,000.00
Reporting Center	OSP

B. NEW PROJECTS FUNDED—JOINT

Project Title:	Effectiveness of Piezometers in High-Plasticity Clays
Sponsor:	Geosyntec Corporation
Principal Investigator:	Chadi El Mohtar
Co-Principal Investigators:	Robert Gilbert
Begin/End Dates:	Sept 1, 2013 – August 31, 2015
Total Award:	47,500.00
Total Award(Your Share):	23,750.00
Budget for 12-13(Total):	23,750.00
Budget for 12-13(Your Share):	11,875.00
Expended in 12-13(Your Share):	11,875.00
Reporting Center:	CAEE

Project Title:	Investigating the interaction between Drilling Fluids and Well Formation from a combined Rheological and Physical Properties Context
Sponsor:	Wider Windows Joint Industry Project
Principal Investigator:	Chadi El Mohtar

Chadi El Mohtar

Faculty Activity Reports

Co-Principal Investigators:	Kenneth Gray
Begin/End Dates:	Aug 1, 2014 – July 31, 2017
Total Award:	150,000.00
Total Award(Your Share):	150,000.00
Budget for 12-13(Total):	0.00
Budget for 12-13(Your Share):	0.00
Expended in 12-13(Your Share):	0.00
Reporting Center:	PGE

C. CONTINUING PROJECTS—INDIVIDUAL

Project Title:	CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media
Sponsor:	NSF
Begin/End Dates:	Dec 1, 2012 - Nov 31, 2017
Requested Budget (Total):	400,000.00
Budget for 13-14:	109,749.00
Expended for 13-14:	109,749.00
Reporting Center	OSP

D. CONTINUING PROJECTS—JOINT

Project Title:	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation
Sponsor:	NSF/NEESR
Principal Investigator:	Steven Kramer (U. of Washington)
Co-Principal Investigators:	Chadi El Mohtar, Ellen Rathje, Matthew Kuhn (U. of Portland)
Begin/End Dates:	Oct. 1, 2009 – Sept 30, 2013
Total Award:	638,327.00
Total Award(Your Share):	166,732.00
Budget for 13-14 (Total):	2,209.00
Budget for 13-14 (Your Share):	2,209.00
Expended in 12-13(Your Share):	2,209.00
Reporting Center	OSP

E. RESEARCH PROPOSALS SUBMITTED—INDIVIDUAL

Project Title:	Incorporating Temporal Ground Motion Characteristics for Improved Pore Pressure Prediction Models.
Sponsor:	USGG
Begin/End Dates:	Jan 15, 2015 – Jan. 14, 2016
Requested Budget (Total):	81,676.00
Proposal Status:	Under Review
Reporting Center:	OSP
Project Title:	Modified Palmgren-Miner Model for Quantifying Liquefaction Susceptibility and Post-Liquefaction Damage Based on Time Domain Ground Motions Characteristics
Sponsor:	NSF
Begin/End Dates:	Sept 1, 2014 – Aug. 31, 2017

Chadi El Mohtar

Faculty Activity Reports

Requested Budget (Total):	249,207.00
Proposal Status:	Under Review
Reporting Center:	OSP

Project Title:	A Steady Flow across CSE Departments towards Interdisciplinary Education
Sponsor:	CSE-Academic Development Funds
Begin/End Dates:	Sept 1, 2014 – Aug. 31, 2015
Requested Budget (Total):	46,728.00
Proposal Status:	Rejected
Reporting Center:	CAEE

F. RESEARCH PROPOSALS SUBMITTED—JOINT

Project Title:	Texas Rating Index for Pavement Sustainability (TRIPS)
Sponsor:	TxDOT
Principal Investigator:	K. Folliard
Co-Principal Investigators:	C. El Mohtar, J. Prozzi, J. Zornberg, M. Blackhurst, and R. Ferron
Begin/End Dates:	Sept 1, 2014 – Aug. 31, 2015
Requested Budget (Total):	1,000,000.00
Proposal Status:	Under Review
Reporting Center:	CTR

Project Title:	Texas Intelligent Highway
Sponsor:	TxDOT
Principal Investigator:	J. Prozzi
Co-Principal Investigators:	C. El Mohtar, K. Folliard, A. Kwasinski, A. Smith, J. Zornberg, R. Ferron, and L. Kallivokas
Begin/End Dates:	Sept 1, 2014 – Aug. 31, 2015
Requested Budget (Total):	1,085,544.00
Proposal Status:	Under Review
Reporting Center:	CTR

Project Title:	Accelerated Track Structure Testing to Evaluate Track Failure and Degradation Monitoring Tools
Sponsor:	FRA
Principal Investigator:	C. El Mohtar
Co-Principal Investigators:	A. Bhasin and J. Betak
Begin/End Dates:	Sept 1, 2014 – Aug. 31, 2017
Requested Budget (Total):	350,000.00
Proposal Status:	Under Review
Reporting Center:	CTR

G. DESCRIPTION OF CURRENT SPONSORED RESEARCH

The *NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation* project is oriented toward producing and interpreting experimental data that will help identify improved intensity measures for prediction of the initiation and effects of liquefaction (collaboration with Prof. Rathje). This work is part of a bigger proposal headed by Steven Kramer from University of Washington and will include running several centrifuge tests in which we will subject relatively simple models to many different (in amplitude, frequency

content, duration, and phasing) ground motions and measure the pore pressure response. The centrifuge tests will be complemented by an extensive series of cyclic simple shear tests using loading histories selected to distinguish optimal intensity measures. The focus of the work here at UT will be on running the cyclic simple shear tests and analyzing the results. The data generated in this work will be used for constitutive modeling of liquefiable soils. These results will provide support for a preexisting framework that allows the timing of liquefaction to be considered in predicting the effects of liquefaction. 2 conference papers have been accepted from this work. 2 journal papers are in the preparation.

The CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media project tackles the limitations in the current state of practice in ground grouting. The current practice is mainly based on field experience and rules of thumb without much theoretical background on flow of viscous suspensions through porous media. One particular application where permeation grouting could be a very practical solution is levee failures. In the last 100 years, about 80% of levee failures occurred due to under seepage. Under seepage is the phenomenon where water starts flowing through an embedded sand layer under the levee and with the water level rising in the levee, the flow rate gets higher increasing the speed of water flow resulting in erosion of the sand layer and forming flow channels that grows bigger and finally causing a collapse of the soil above it including the levee. The current state of practice involves constructing a slurry wall through the levee and all the way down to the sand layer and beyond it. This approach was adapted because of lack of success with permeation grouting in the field. With the new engineered bentonite grouts, we can modify the bentonite grouts to allow it to permeate through the sand layer to form an impervious curtain wall that would prevent under seepage. The bentonite would be engineered to have lower initial viscosity to allow for penetration but then recovers the higher viscosity so that it remains in the sand and does not get flushed out. This work has already resulted in a PhD dissertation, a Master's thesis, 6 published/accepted journal paper and 3 accepted referred conference papers and 2 non-referred conference papers. 2 additional journal papers were submitted on work extending from this topic with 2 more papers in preparation.

The Effectiveness of Piezometers in High-Plasticity Clays project is a direct result of uncertainties in field piezometer readings when installed in high-plasticity clays with low hydraulic conductivities. To successfully utilize a piezometer in a grouted borehole, the hydraulic conductivity of the grout (k_{grout}) must be within a narrow range relative to the hydraulic conductivity of the surrounding soil (k_{soil}). If the ratio of the hydraulic conductivities (k_{grout}/k_{soil}) is too high, the measured pore pressures in the piezometer might not be a good indicator of the actual pore pressures in surrounding soil of the piezometer. High hydraulic conductivity grouts can lead to hydraulic bridging between the different soil layers (or even just different locations within the same layer) and the measured values would reflect some average over the entire length of the grouted borehole instead of at the location of the piezometer. Current practice relies on cement bentonite (CB) grouts, with k_{grout} being reported in the literature between 10^{-5} to 10^{-8} cm/s. However, recent independent lab measurements of hydraulic conductivity of such grouts were not able to produce such low values, with k_{grout} often being as high as 10^{-4} cm/s. The goal of this research is to recreate these lab tests and isolate variables creating this discrepancy. It is believed that factors like the aspect ratio of the test samples and electrolytic content of the permeating fluid can greatly influence k_{grouts} , although they parameters are not commonly standardized when reporting data in the literature. Using current experiences with grouts and grouting of soils, a procedure more detailed CB grout preparation procedure is being developed that can yield consistent low hydraulic conductivity values while still representing in-situ conditions. Furthermore, a controlled series of laboratory tests will be created to determine appropriate k_{grout}/k_{soil} ratios for high plasticity clays since most current recommendations are based on soils with hydraulic conductivities higher than those expected in such fat clays. These results will provide an important contribution to the existing literature and supplement the existing data; more importantly, the current work will provide new criteria that can validate/refute some of the conflicting current recommendations for acceptable k_{grout}/k_{soil} ratios.

H. DESCRIPTION OF CURRENT UNSPONSORED/DEPARTMENTAL RESEARCH

The current unsponsored research focuses on developing new smarter methods for improving soil and aggregate and aggregate performance in the field. The new approach focuses on engineering the soil pore fluid to achieve the desired enhanced performance as compared to the traditional approach where the soil structure is modified. This new approach focuses on introducing Rheology into Geotechnical engineering to allow for characterizing and describing the pore fluids used based on their engineering properties (Yield stress, elastic and viscous modulus, viscosity, ...) as compared to traditional volumetric and gravimetric measures (concentration of suspension,

percentage of treatment to total mass). This new approach would allow for correlating the change of the soil on a macro scale to the changes in the properties of the pore fluid at the micro scale.

The first project focuses on using engineered bentonite grouts to improve the liquefaction resistance of loose saturated sands. During my Phd research, a lot of work was done on this topic with the “wished in place” bentonite. The current research focuses on permeating sand with the engineered bentonite suspensions and determines the change in the mechanical properties of the sand with the viscous fluid inside the pores. The research is currently focusing on determining the effects of the pore fluid on the static shear strength of sand using static triaxial testing. This work has already produced a Master’s Thesis, 1 journal paper and 1 conference paper. A second journal paper is in the works.

The second project studies the use of sand bentonite mixtures to replace clay liners in the field. The study focuses on the effects of the bentonite hydration (percentage and uniformity) on the overall hydraulic conductivity of the mixture. The work consists of preparing SBMs in different mixing methods that would result in providing upper and lower boundaries for the degree of bentonite hydration. These results could raise important concerns on the current field application and whether the field design might be under designing the liners if the field mixing is not thorough enough to ensure complete bentonite hydration. This work has already produced 2 Master’s Theses and 2 conference paper with a journal paper in preparation.

The third project is constructing a mid-size shaking table that will allow for testing soil samples (with and without treatment) that are larger than the element testing (triaxial testing) but still smaller than large field scale testing. This would allow for a more realistic permeation modeling of the field process as compared to the permeation done for triaxial setups (horizontal grouting rather than vertical grouting). The final design is done and the shaking table has been commissioned with a series of preliminary tests performed to evaluate its performance. A Master’s thesis has been submitted documenting the work.

The forth project focuses on developing an understanding of NAPL processes in sedimenting and identifying conditions under which a sediment cap may provide adequate containment (collaboration with Prof. Reible and Gilbert). An experimental protocol is being developed to assess the mobility of NAPL in sediments when they consolidate under the weight of a cap. In the first year of the project, work has been focused on developing the experimental procedure to evaluate the consolidation behavior of soft and compressible sediments. Specimens representative of sediments are being artificially created in the laboratory by mixing clay minerals with water and oil mixtures. A variety of modifications to standard triaxial testing equipment and procedures have been necessary to achieve the goal of precise and accurate results with the low effective stresses and high compressibility involved. The results to date provide a controlled baseline to assess factors that control NAPL migration. This work has already produced 1 Masters Thesis, 1 PhD dissertation, 2 published journal papers, 2 referred conference papers, 2 non-referred conference papers and an invited article in GeoStrata. 2 more journal papers are being prepared.

The fifth project is still in the design/discussions phase. The work is a collaboration with Prof. Bhasin on developing a railroad research program at UT. The program will build on the testing capabilities with the shaking table discussed earlier to develop a railroad model testing facility along with the ballast testing capabilities that will provide UT with new capability to investigate the railroad structure performance under various loading conditions. The project is currently in the early stages of discussions with the interested parties from FRA and the major railroad companies to establish the necessary connections for collaboration and funding. 1 conference paper has been presented on this topic.

Part 5: Professional Development

A. Short Courses

- REES 2014- Railway Engineering Education Symposium (2014) form June23-26th, 2014 at BNSF Technical Training Center in Overland Park, KS

B. Workshops

- Attended DOD seminar about funding opportunities with DOD and other Federal agencies, Feb 18, 2014, Austin, Texas
- Attended Campus Conversation with Provost Fenves and President Powers on Using Technology to Enhance Teaching and Learning on UT Campus, Feb 18th, 2014, Austin, Texas
- Participated in Explore UT: Demonstration of a sinking building constructed on a liquefiable soil during an earthquake loading, March 1st, 2014.
- Attended Third Campus Conversation on the Transformative Power of the Residential Experience on March 24th, 2014, Austin, Texas
- Attended 2-day Wider Window - JIP meeting with Industry sponsors April 10-11, 2014, Austin, Texas.

C. Technical Conferences

- GeoCongress 2014: Geo-Characterization and Modeling for Sustainability. Attended and had a paper accepted (presented by my PhD student and I received My Casagrande Award during the Awards Luncheon. Feb. 23-26, 2014 in Atlanta, GA.
- 19th AAR Annual Review Conference, Colorado Springs, CO, April 1-2, 2014.
- 10th U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014

D. Meetings

- ASCE Soil Properties and modeling committee meeting via web conference, Dec. 18th, 2013
- ASTM D18.09 committee meetings in Houston, Texas, June 27-29, 2014
- ASCE Soil Properties and modeling committee meeting in Atlanta Georgia, Feb. 23rd, 2014
- ASCE Grouting committee meeting in Atlanta Georgia, Feb. 24th, 2014

Part 6: Engineering Recognition

A. AWARDS & HONORS

- Arthur Casagrande Professional Development Award- Awarded by ASCE Geo-Institute.
- REES2014 Faculty Grant Award- Awarded by the American Railway Engineering and Maintenance-of-Way Association (AREMA).

B. LISTINGS

- Invited article: ASCE G-I GeoStrata: "The Geoengineering of Contaminated Sediments", Nov-Dec Issue, 2013.

Part 7: Professional Community Service

- Reviewer, ASCE Journal of Materials in Civil Engineering
- Reviewer, Soils and Foundations

Chadi El Mohtar

Faculty Activity Reports

Part 8: Professional Experience

A. PROFESSIONAL REGISTRATION

Current: Licensed Civil Engineer, Syndicate of Engineers and Architects, Beirut, Lebanon,

B. CONSULTING

(Number of Days, Company)

Chadi El Mohtar

Faculty Activity Reports

Department of Civil, Architectural and Environmental Engineering

Name: **Chadi El Mohtar** Academic Year Ending: **31 Aug 2014**
 Rank: **Assistant Professor** Report Date:
 Endowed Position
 PE Status (Texas): Faculty Signature: *Shadi Mohtar*

WORK EXPERIENCE YEARS

Years in Rank at UT: 6 Years Teaching Experience: 6 Years Other Experience: 0

GRADUATE STUDENT SUPERVISION (*In UT career total only, count each co-supervised student as 0.5)

M.S. Students:	<u>13-14</u>	M.S. Graduated:	<u>13-14</u>	<u>UT CAREER TOTAL *</u>
# of students supervised:	1	# of students supervised:	1	
# of students co-supervised:	1	# of students co-supervised:	0	MS Graduated: 6.0
Ph.D. Students:	—	Ph.D. Graduated:	—	
# of students supervised:	2	# of students supervised:	0	PhD Graduated: 1.5
# of students co-supervised:	0	# of students co-supervised:	0	

TEACHING**Teaching Evaluations**

Semester	Course Number	Number of Students	Instructor Rating	Course Rating
Fall	CE 387L1	18	3.9	3.7
	CE 357	55	4.4	4.0
Spring	CE 357	47	4.0	3.7

CONTRIBUTIONS TO TECHNOLOGY

	<u>13-14</u>	<u>CAREER TOTAL</u>
Refereed Archival Journals Papers in Print:	5	13
Refereed Archival Journal Papers Accepted or In Press:	1	—
Refereed Archival Journal Papers Under Review:	2	—
Refereed Conference Proceedings:	2	13
Nonrefereed Publications:	2	9
Books Authored or Co-Authored:	0	0
Books Edited or Co-Edited:	0	0
Book Chapters Authored or Co-Authored:	0	0
Oral Presentations:	8	34
Copyrighted Software Packages:	0	0

GRANTS AND CONTRACTS

	<u>13-14 Only</u>	<u>SIX-YEAR TOTAL (08-14)</u>
Number of Projects (New and Continuing):	5	14
Total Awarded to all Projects: \$(K's) (new & continuing)	\$206K	\$1,729K
Your Share Awarded: \$(K's) (new & continuing)	\$184K	\$1,090K
Your Share Spent:	\$134K	-----

Chadi El Mohtar

Faculty Activity Reports

Chadi El Mohtar

Assistant Professor

Civil, Architectural and Environmental Engineering

COMMITTEES in 13-14

	<u>MEMBER</u>	<u>CHAIR</u>
UT Department and College:	3	0
All University:	0	0
Professional and Technical (including subcommittees):	6	2

ENGINEERING RECOGNITION IN 13-14

- Arthur Casagrande Professional Development Award- Awarded by ASCE Geo-Institute.
- REES2014 Faculty Grant Award- Awarded by the American Railway Engineering and Maintenance-of-Way Association (AREMA).
- Invited article: ASCE G-I GeoStrata: "The Geoengineering of Contaminated Sediments", Nov-Dec Issue, 2013.

FACULTY PARTICIPATION IN ACADEMIC EVENTS IN 13-14

- College of Engineering, Graduation Ceremony, December 2013
- Advisor, Geo-Institute Graduate Student Chapter
- Organizer (along with the G-I student chapter), Reese Memorial Golf tournament (day after The Reese Lecture)
- Organized a talk for BNSF introducing undergraduate students to railroad operations and challenges in the US.
- Handled the admission and recruiting for the Geotechnical Engineering Group.
- Taught 2 lectures in CE 375 for Prof. Zornberg.
- Invited speaker to CE 397S to talk about grouting.
- Attended REES 2014- Railway Engineering Education Symposium (2014) from June 23-26th, 2014 at BNSF Technical Training Center in Overland Park, KS
- Attended Campus Conversation with Provost Fennes and President Powers on Using Technology to Enhance Teaching and Learning on UT Campus, Feb 18th, 2014, Austin, Texas
- Participated in Explore UT: Demonstration of a sinking building constructed on a liquefiable soil during an earthquake loading, March 1st, 2014.
- Attended Third Campus Conversation on the Transformative Power of the Residential Experience on March 24th, 2014, Austin

HIGHLIGHTS OF INDIVIDUAL ACCOMPLISHMENTS FOR 13-14

- Arthur Casagrande Professional Development Award- Awarded by ASCE Geo-Institute.
- REES2014 Faculty Grant Award- Awarded by the American Railway Engineering and Maintenance-of-Way Association.
- Invited article: ASCE G-I GeoStrata: "The Geoengineering of Contaminated Sediments", Nov-Dec Issue, 2013.
- Published 5 journal papers, with 1 additional paper accepted and 2 still under review.
- Submitted an NSF, a USGS and a CSE Academic Development funds proposal as the sole PI and I am a co-PI on 2 submitted TxDOT proposal and the lead PI on an FRA proposal.
- My research group and I gave 8 presentations about the ongoing research at UT including 2 invited talks.
- Had an REU proposal funded from NSF and a second proposal funded through Wider Window JIP (with co-PI: Dr. K. Gray)
- Attended the GeoCongress 2014, Atlanta, Georgia, the 19th AAR Annual review in Colorado Springs and the 10th U.S. National Conference on Earthquake Engineering (July 21-24, 2014).
- Attended Reese lecture entitled: "Observations and Ground Control during Shield Tunneling – from 1841 to Today" by Dr. Edward Cording.
- Co-Chair GeoCongress 2014 session: Hydrocarbon Bearing Geomaterials for Sustainable Energy Production
- Session Organizer, 2013 ASCE Texas Section Fall Conference and Centennial Celebration: Geotechnical Research at the University of Texas at Austin
- Task Group Chairman: ASTM WK38054, Cyclic Simple Shear Test with load Control and with Displacement Control
- ASCE Soil Properties and modeling committee meeting via web conference, Dec. 18th, 2013
- ASTM D18.09 committee meetings in Houston, Texas, June 27-29, 2014
- ASCE Soil Properties and modeling committee meeting in Atlanta Georgia, Feb. 23rd, 2014
- ASCE Grouting committee meeting in Atlanta Georgia, Feb. 24th, 2014
- Reviewer, ASCE Journal of Materials in Civil Engineering, and Soils and Foundations

2. TEACHING

Budget Council Statement

Prepared by Robert B. Gilbert



Evaluation of Dr. El Mohtar's teaching was based on a review of his instructor surveys, peer reviews of his teaching, and a review of his teaching portfolio.

While in rank as an Assistant Professor, Dr. El Mohtar has taught three different courses: two undergraduate courses and one graduate course:

CE 357 Geotechnical Engineering. This undergraduate course is required of all students in Civil Engineering and Architectural Engineering and is normally taken in the junior year. This course represents the first exposure of students to soil as an engineering material and it is also a prerequisite for the two additional undergraduate courses in Geotechnical Engineering. Because this course is the only required geotechnical course, it is important for exposing new students to the field of geotechnical engineering.

CE 375 – Earth Slopes and Retaining Structures. This undergraduate course is an elective for both Civil Engineering and Architectural Engineering students and is normally taken in the senior year. It is an advanced undergraduate course that concentrates on geotechnical engineering problems associated with the stability of soil masses and the design of support systems.

CE 387L – Consolidation and Shearing Properties of Soils. This graduate course is a required course taken by all graduate students in geotechnical engineering during their first year at UT. The course covers the mechanics of soil behavior, a topic that is a fundamental building block for the other ten graduate courses in geotechnical engineering. The course includes a significant laboratory component, which requires an unusual amount of student time and student-faculty interaction.

While in rank from Fall 2008 through Spring 2014 Dr. El Mohtar has taught 16 classes, with 11 undergraduate and 5 graduate classes. His courses typically have more than 20 students and he has been willing to teach courses at all levels. His teaching load is consistent with expectations within the Department and is similar to other faculty in our group. He is the only current faculty member in our group who is teaching a required graduate course.

At the undergraduate level, Dr. El Mohtar's average instructor rating is 4.2 and his average course rating is 3.9, which puts him on par with the average ratings both in the Department and in the School of Engineering. In CE 357 over the past three years, his average instructor rating (4.3 in four offerings) is the same as the average for all other faculty including full professors who taught that course (4.3 in eight offerings). In CE 375 over the past three years, his instructor rating (4.6 in one offering) exceeds those of the other full professor teaching the course (4.3 and 4.5). There are two notable aspects in his ratings. First, he received relatively low ratings his first semester here teaching CE 357. He subsequently worked hard to improve his teaching, consulting with the UT Center for Teaching and Learning and participating in a 6-day teaching workshop offered by American Society of Civil Engineers Excellence in Civil Engineering Education, and his ratings improved markedly. Furthermore, his ratings also improved

Chadi El Mohtar

Department of Civil, Architectural
and Environmental Engineering

significantly between the first time and the second time he offered CE 375. Therefore, it is clear that Dr. El Mohtar is committed to being a strong teacher. Here is an example undergraduate student comment from a recent offering: "Great Prof., very engaging. I enjoy the class discussions on things that aren't immediately intuitive." A second noteworthy aspect of his student ratings is that they dipped slightly in 2013 and 2014 when his father in Lebanon became gravely ill and ultimately passed away. It is a testament to Dr. El Mohtar's dedication to teaching that he still performed so well for the students during this trying personal time for himself.

At the graduate level, Dr. El Mohtar's average instructor rating is 3.6 and his average course rating is 3.5. These ratings are below the average ratings for the Department and the School of Engineering. However, this graduate course is not the typical graduate course in engineering. It is a required course that is time-consuming because it has a significant laboratory component; the students rate it as an above-average work load and make comments like "it did become frustrating to organize lab meetings around everyone's schedules." Also, the geotechnical group re-organized our graduate courses and asked Prof. El Mohtar to combine material from two previous courses (one on shear strength and one on consolidation) into a single course the first time that he taught it. Finally, his course ratings have steadily improved each time he has taught the course. This course is important to our graduate program and our students are fortunate to have Dr. El Mohtar teaching it with his strong emphasis on fundamental concepts and experimental methods. We expect that Dr. El Mohtar will continue to improve the course in the future.

The peer evaluations for Dr. El Mohtar are positive and consistent with his student evaluations. All peer reviewers note the innovative techniques he uses to try to engage students, such as music, voting flash cards and electronic note templates, that these techniques can be effective, and that there is room for improvement. One peer reviewer concludes "He was obviously interested in the students and in helping them to understand the subject." The peer reviews for his graduate class are particularly insightful to the dedication of Dr. El Mohtar to teaching. One reviewer concludes, "My overall sense of this class and instructor is that Dr El Mohtar is an enthusiastic teacher who has good communication with the students, and who is certainly dedicated to the idea that they should connect the theory they learn in the classroom with laboratory experience." A second reviewer concludes, "In summary, I found that Dr. El Mohtar is a good and effective teacher; there is room for improvement, but many of the essential elements to being a great teacher are in place."

Dr. El Mohtar's teaching portfolio demonstrates his commitment to and skill at teaching. He has developed a complete set of electronic note templates for each course. These templates are then filled in by the students during the lecture in order to encourage interaction and engagement. He has continuously improved these templates over time as he learns what works best for the students. He has also devoted significant effort to developing effective laboratories for the graduate course on soil mechanics. He has modified this portion of the course each time he has offered it in an attempt to make it as useful and efficient for the students as possible.

While in rank, 5.5 M.S. students and 1.5 Ph.D. students have graduated under Dr. El Mohtar's supervision. He has also served as a member of 16 Ph.D. committees and as a reader for 13 M.S.

Chadi El Mohtar

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theses or reports. Finally, he has supervised 15 undergraduate research assistants. Dr. El Mohtar is contributing significantly to educating and mentoring students outside of the classroom.

Chadi El Mohtar

Department of Civil, Architectural
and Environmental Engineering

Chadi El Mohtar

Teaching Statement

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Teaching Statement**

I am committed to developing and applying unique and novel teaching techniques to maximize student learning. Successful teaching, particularly in a highly applied field like engineering, requires an engaging classroom environment that cultivates student curiosity about the fundamental physical concepts that govern engineering applications. I have worked on establishing myself as an engaging teacher through a multitude of teaching techniques, such as: (1) allowing my teaching style and course content to evolve based on self-reflections, peer evaluation and student feedback; (2) developing a two-way communication with the students inside and outside the classroom; and (3) utilizing a variety of interactive teaching approaches with a heavy reliance on visual aids and everyday examples and applications, as well as relevant concepts in other areas of Engineering.

Over the past 6 years, I taught two undergraduate level courses (CE 357: Geotechnical Engineering and CE 375: Earth Slopes and Retaining Structures) and one graduate level course (CE 387L.1: Consolidation and Shearing Properties of Soils). Additionally, I am scheduled to teach a new graduate class (CE 392L: Measurement of Soil Properties) in Spring 2016. Below is a brief description of the courses I taught followed by a detailed description of the techniques I am using to implement my teaching philosophy.

CE 357: Geotechnical Engineering is a required Base Level course for all Civil and Architectural Engineering undergraduate students and is offered in two sessions each semester. This course is traditionally a challenging one because of the many new concepts introduced, but mainly because it is the students' first exposure to dealing with particulate rather than continuous materials. The main goals of this course are to: (1) introduce the subject of geotechnical engineering, (2) familiarize students with relevant terms and soil tests, and (3) teach students how to solve fundamental problems related to consolidation, shear strength, and design of geotechnical projects. I taught this course nine times (more than one third of the total offerings over the past six years) and made significant modifications to its content. Specifically, I worked closely with the TAs and lab technician to evaluate the laboratory component of the course. We developed new experiments to replace older ones that were not fully serving their intended educational goals or were using outdated equipment. As a result, each year we enhanced the laboratory manual to maximize students' learning outcomes by making the experiments more time-efficient and consistent with the class lectures.

CE 375: Earth Slopes and Retaining Structures is a Level I elective course offered once a year in the Spring semester to undergraduate students. This course focuses on geotechnical engineering problems associated with the behavior of earth masses. Specifically, the four major areas covered in this course are: (1) Soil compaction and properties of compacted soils, (2) Seepage, drainage and principles of water flow through soils, (3) Slope stability and limit equilibrium analyses and (4) Earth pressures and design of retaining structures. I taught CE 375 twice while in rank and incorporated in-class models to simulate ground water flow to the course content.

CE 387L.1: Consolidation and Shearing Properties of Soils is the only required course in our Graduate Geotechnical engineering program curriculum, so all incoming graduate students should take it. It is offered every Fall semester and I am the only professor teaching it. Prior to my arrival at UT, the Geotechnical Engineering group was offering two independent graduate courses to cover Shear Strength (CE 387L.1) and Consolidation (CE 387R.1) of soils due to the importance of each of these topics. CE 387L.1 was offered every Fall while CE 387R.1 was offered every other Spring. Upon extended discussions within the group, and based on my suggestion, I developed this revised CE 387L.1 course covering both topics, while maintaining a significant portion of the laboratory component of both courses. This merger was a priority for me since I strongly believe it is in our students' best interest. This is because, in order for our students to have the appropriate background in subsequent graduate Geotechnical Engineering courses, they need a

good understanding of both shear strength and consolidation. Therefore, waiting for their last semester to learn about consolidation (as was previously the case) was not the best approach to maximize their learning.

Evolving Pedagogy through Training and Feedback

A major part of my responsibilities as a teacher is to expand students' learning outcomes. This, I believe, involves exerting a constant effort towards self-improvement as a teacher. I realized early on that in order to lead a successful career in academia, I would need to utilize all possible teaching enhancement resources. These include: (1) students' feedback, (2) trainings in teaching, (3) advice from teaching experts and (4) self-evaluation.

Upon joining UT as a first-time college faculty member, I developed an anonymous mid-course evaluation survey for each course I taught in my initial 2 years. This mid-course evaluation allowed me to incorporate students' feedback into the second half of the semester, therefore, accelerating the rate of adaptation to students' needs. Additionally, I was able to use the end of the semester CIS results as a second round of evaluation from the same group of students, providing a unique opportunity to get feedback on teaching refinements to address specific concerns, such as speaking slower or including summaries of relevant information from previous lessons at the beginning of each lecture. One example of adapting the course content to students' feedback is the changes I made to how I conducted the laboratory component of my graduate class, CE 387L.1. In the earlier semesters, the students were required to perform the complete experiments and generate all the data needed to do the analysis. This proved to be very time consuming for students; particularly that some of the advanced experiments required multiple trials for first time users before achieving a successful test. As an alternative, I used my "Modified Instructional Duties" semester to develop data sets for all the experiments that students can analyze. Students still get to see how the experiments are performed, run at least one test on their own, and for those who are interested in experimental research, they have the option to perform all the tests themselves.

A second example of indirect student feedback (through lack of participation) is attempting to involve students in out-of-class discussions. During the earlier part of my tenure, I tried to use the discussion board provided by Blackboard as a second means for students to ask questions and start out-of-class discussions. However, there was not sufficient student participation and I discontinued using this approach. Instead, I started incorporating Twitter to get students more engaged outside of the classroom using social media. After each lecture, I tweet four postings with the "#CE357S14 #Thingstoremember" (snapshots of a few tweets are included in the Discretionary Supplemental Materials). Searching by those hash-tags allows students to access the main take-away from each lecture. It is also a platform for the students and me to tweet/retweet questions, information and news relevant to the course.

I also actively sought training opportunities to develop my teaching skills. One of the most fruitful training experiences was attending the American Society of Civil Engineers Excellence in Civil Engineering Education (ExCEED) teaching workshop. This intense 6-day workshop provided valuable information on effective teaching techniques, planning courses, student learning styles, and interpersonal rapport. Particularly, I have found the workshop useful to improve student participation especially in the large undergraduate classes. Before attending the workshop, I used to include multiple choice questions as part of my lectures and ask the class to vote by raising their hands, one answer at a time. However, this approach proved inefficient to get the more timid students to participate. One of the methods introduced during the ExCEED workshop to increase class participation was using red and green index cards for in-class voting. Everyone has to raise the cards at the same time, and therefore, all students are encouraged to participate. To accommodate more discussion options, I created three different color voting cards which I hand out to students at the beginning of each semester (green, yellow and red cards with YES/1, MAYBE/2 and NO/3 printed one each side, respectively). These cards are a no-cost alternative to using the clicker.

I also sought the advice of experts from the Center of Teaching and Learning about novel teaching techniques proven to keep students attentive and involved in the classroom. Their input, upon attending a couple of my lectures, was very positive and encouraged me to maintain my teaching approach. Additionally, I have always sought the input from senior professors who sat in my classes as part of the

peer-evaluation process as well as through informal personal interactions. Receiving their first-hand feedback and discussing their assessments have been very helpful in refining my teaching techniques. I feel that the adaptive and reflective strategy that I implement in teaching has improved me as a teacher over the years, as reflected by my CIS instructor ratings. My instructor rating increased from 3.4 and 3.2 for the first undergraduate and graduate courses I taught to an average of 4.4 and 3.8, respectively, over the last three years (with highs of 4.7 and 3.9).

Interactive Learning: In-Class and Out-of-Class Student Learning and Engagement

I have always valued the importance of the teacher-student relationship and the significance of good communication inside and outside the classroom on the performance of students, and more importantly, on their ability to learn the course material. Accordingly, I have made every effort to establish a two-way communication with my students, and respond to each of their unique learning needs. Such a relationship should start first in the classroom and then extend outside of it. Therefore, my first priority is to involve students in the class and keep them engaged during lecture time through designing interactive lectures.

Interactive learning is a valuable method to keep more students engaged during a lecture. I try to provide multiple opportunities to encourage all students, even the timid ones, can express themselves in the classroom either through individual or class-wide interactions. First, I start every lecture by playing a pop culture song as students walk into the classroom; the songs usually include a reference to the topic being discussed such as “shifting sands” for strength of sand lecture or “quicksand” for liquefaction lecture, etc. I would then start the class with a lively discussion on the geotechnical concepts that are mentioned in the song and whether the song is “Geotechnically sound” or not (for example: shifting sand with wind is appropriate because of lack of cohesion in sand while shifting clay would not be correct).

To facilitate interactive learning, I prepare a Course Notes package that includes the handouts of my lecture presentations, which students bring to class and use them for taking notes. The package also includes additional reading materials along with the assignments for the whole semester, each placed after its corresponding lecture. The lecture slides and handouts were carefully designed to minimize “copying text off the board” and maximizing the interactive portion of the lecture. In the classroom, I use my tablet stylus to fill in the missing information (rather than pop-out text) to ensure a slow enough pace that allows students time to write down notes without missing any of the class discussion. Many students have complimented this “hybrid” teaching technique and often referred to it as “very organized” and “most effective” in their CIS comments. A one slide sample from the handout in the Course Notes package and how it is filled out in lecture is provided in the Discretionary Supplemental Materials along with a sample of the CIS comments on course organization/lecture presentation and interactive and engaging lectures.

The time gained from using this teaching style provides me with multiple opportunities to ask questions during each lecture and I use the students’ answers as a real-time feedback on their understanding of the material before moving on to the next topic. For individual student participation, I refer to students by first name when asking them a question and try to work with them to come up with the answer while always providing positive encouragement. For class-wide participation and discussions, I ask a multiple choice question and the class is given few minutes to think about. All students then vote at the same time using the voting cards discussed earlier. After everyone votes, I follow up by asking one student from each group to explain their answer before I provide either the final answer or some additional information for them to consider and have them vote again. I also plan some of the class wide discussions to “spontaneously” develop by asking the same question to multiple students and using their answers to come up with the multiple choices.

Outside the classroom, I try to encourage students to take advantage of office hours to discuss any difficulties they are having in class or to expand more on topics of interest to them, but are beyond the scope of the course. I keep track of the progress of individual students on their weekly assignments and/or laboratory reports. Whenever I notice students falling behind, I arrange for a private meeting outside my office hours and discuss their situation and offer help. On multiple occasions, this led to putting the students in contact with officers at the UT Counseling and Mental Health Center (CMHC) where they were able to

receive help and get back on track. Additionally, after each exam I assigned extra office hours to give each student the opportunity to meet with me and go over their exam and discuss their performance. On average, I had more than 50% of the total students attend these sessions and students have mentioned in their course evaluations that it was very helpful for them to get individual feedback on the mistakes they made on exams and the topics that they needed to go back and revisit (a sample of the students comments are included in the Discretionary Supplemental Materials). I also make a point of passing by each of the laboratory sessions multiple times to check on how the experiments are being conducted and get feedback from students.

I encourage undergraduate students to participate in ongoing research activities and join my research group; I've been successful in recruiting 10 undergraduate students to be part of my research team, providing them with opportunities to learn about cutting edge new research while contributing to the overall research progress. At the graduate level, a much more significant out-of-class learning occurs with the assigned technical papers to read. These papers are then discussed during lectures as a technical critique of a "paper under review". Additionally, as the faculty advisor for the Geo-Institute graduate students chapter, I help in organizing seminars with invited speakers on campus as well as trips to relevant Geotechnical Engineering lectures and conferences that provide our students with unique learning opportunities.

Intuitive Learning: Incorporating Physical Models, Research and Everyday Life in the Classroom

"People learn more quickly by doing something or seeing something done." - Gilbert Highet

This statement is particularly true for our engineering students as evident by student feedback on the CIS forms. For this purpose, I have developed physical models to help students visualize the different geotechnical phenomena, and equally important, get them excited about the topic (a sample of the students comments along with images of the models are included in the Discretionary Supplemental Materials). Students are more likely to understand the general principles and apply what they have learned whenever they are exposed to a concept in multiple contexts, along with examples. For example, I introduce multiple models to help students understand the concepts of groundwater flow and head loss through soils. The first model consists of a sandbox with a pump that allows a constant flow of water; the sandbox is equipped with multiple stand-pipe piezometers along the height of the sand. The students get to see the change in water levels in the piezometers with no flow, upward and downward flow and relate it to head-loss discussions in the lecture. The second model consist of simulating groundwater flow using an electrical model; the soil is represented by a high resistance conductive paper cut to match the same geometry from the example discussed in the class. A "recycled modem DC power supply" is used to apply the voltage and students can see head loss along the flow lines through the "soil" as a voltage drop using a multimeter.

Whenever possible, I incorporate examples of everyday life activities into my classroom. Some of the examples brought up are as simple as discussing how to water the grass at the far end of the yard without need to walk there (when discussing the relation between ground water velocity and cross-sectional area), a card deck in its box versus the same deck built as a house of cards (when describing the effect of soil fabric on its void ratio) or standing on a barrel filled with sand versus standing on the same sand piled with no confinement. Other examples are more elaborate and extend throughout the whole lecture: as an example, when covering soil compaction, I ask for a volunteer from the class who is a good cook. We proceed to empty a newly bought sugar bag in a sugar container and then introduce the concept of vibratory compaction of granular soils by tapping on the sides of the container to be able to place all of the sugar in the jar. Later in the same lecture, I go back to the same student to refer to clay compaction in the field and how that simulates the "kneading" action used to prepare bread dough.

I incorporate some concepts of my research into my lecture. One topic that I always bring up in lectures is liquefaction, and I use the same sand box model introduced earlier to show a "sinking building" due to liquefaction and discuss different mitigation techniques, including densification and grouting. Another example of incorporating research in the class room is having the students experiment with rock samples that were sheared along a natural fracture versus a smooth cut and determine which one is easier to shear. This is followed by a discussion on the definition of internal friction angle and the fact that it includes dilation and interlocking strength as well as friction.

Chadi El Mohtar

Teaching Summary Tables

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Teaching Summary Tables****Table 1. Teaching Summary**

Metric	Value
# of Students Taught	535 (UG: 432 and Grad: 103)
Average Instructor Evaluation UG	4.19 (last 3 years: 4.36)
Average Instructor Evaluation Grad	3.64 (last 3 years: 3.77)
Average Course Evaluation UG	3.93 (last 3 years: 4.00)
Average Course Evaluation Grad	3.50 (last 3 years: 3.63)

Table 2. Course schedule by semester in CE since 2008; number of students indicated.

Course	F 08	S 09	F 09	S 10	F 10	S 11	F 11	S 12	F 12	S 13	F 13	S 14
CE 357	34	33		32	38	46	36			45	55	47
CE 375				27				39				
CE387L.1			27		14		20		24		18	

Table 3. Summary of Current Graduate Students Supervised at UT-Austin

Student	Co-Supervisor	Degree	Start Date	Date Reached Candidacy	Date Expected to Reach Candidacy	Expected Graduation Date
Kwan, Wing Shun		PhD	09/2011	05/2014		05/2015
Sangroya, Ritika		PhD	09/2012	08/2014		05/2016
Brewster, Alexander	R.B. Gilbert	MS	09/2013			05/2015
TBD*		PhD	09/2014		08/2016	05/2018

* Student to be appointed on the recently awarded WW JIP project.

Table 4. Summary of Current Undergraduate Students Supervised at UT-Austin

Student	Co-Supervisor	Degree	Start Date	Expected Graduation Date
Patricia Bennett		BS	09/2013	Spring 2015
Abigail Kugel		BS	06/2014	Spring 2015
Brian Landry		BS	06/2014	Spring 2015
Masaaki Ward		BS	06/2014	Spring 2015

* = $\Sigma(\text{course GPA} \times \text{course enrolment}) / \Sigma \text{course enrolment}$

PEER EVALUATION OF TEACHING
Dr. Chadi El Mohtar
CE 357 – Geotechnical Engineering
October 14, 2013

Observation and Evaluation by
Michael D. Engelhardt

I attended Dr. El Mohtar's class on Monday, October 14, 2013, from 9 to 10am in CPE 2.206.

Prior to the 9am start time of the class, as students were coming into the classroom, Dr. El Mohtar had the first PowerPoint title slide projected on the screen, and was streaming a song on "Consolidation," which was the topic of the day's lecture. Dr. El Mohtar let me know he regularly has music playing as students enter the classroom, where the music selection is related to the topic of the lecture that day. It appeared that students enjoyed and appreciated this.

Dr. Mohtar started the lecture by greeting the class (and joking a bit about football). He then provided an overview of the upcoming lectures and also provided a brief review of key ideas from the previous lecture. Overall, his introductory remarks were effective in framing today's lecture in the context of what has already been covered and what will soon be covered.

Dr. El Mohtar's used PowerPoint slides for much of his lecture. PDF copies of the slides were available to students to print out before class. The slides contained only a small amount of information; such as a few key phrases and figures. During the lecture, Dr. El Mohtar added additional information to each slide by using a tablet computer, which allowed him to annotate slides. Thus, although students had copies of the PowerPoint slides, they still had to take notes during the class. However, they did not need to take time to draw involved figures, as these were already provided on the slides. Overall, Dr. El Mohtar used a very effective combination of PowerPoint and note taking. Students seemed to remain attentive during the lecture, as opposed to losing focus, as can occur when PowerPoint is used.

As part of the lecture, Dr. El Mohtar did a demonstration of consolidation by using a water bottle with a weight. He asked for some student volunteers to help with the demonstration (and a number of students did, in fact, volunteer), and then projected the demonstration using the document camera so everyone could see. The demonstration was well, done, and students seemed very interested.

Dr. El Mohtar was very interactive with the students throughout the entire lecture. He frequently asked questions, and students always responded to these question. Students also asked questions at several occasions during the lecture, and Dr. El Mohtar took the time to answer each question thoroughly. In some cases, Dr. El Mohtar asked the class a question, and then asked students to vote for the answer using colored cards. Overall, his teaching style was very effective in keeping students actively engaged in the lecture. Dr. El Mohtar spoke very clearly during his lecture, and could be easily understood in the back of this rather large classroom. It also was clear to me that

he was very enthusiastic and knowledgeable about the course material, and this enthusiasm seemed to rub off on the students.

Overall, Dr. El Mohtar did an excellent job in this lecture. He was very well prepared and organized, and presented the material in a clear manner. There were no significant deficiencies in his teaching style or in the content of his lecture.

Date of observation: October 14, 2013

Date on which observation was discussed with Dr. El Mohtar: October 14, 2013

Date of this report: February 11, 2014

A handwritten signature in black ink, appearing to read "Michael D. Engelhardt". The signature is fluid and cursive, with a large, stylized initial "M".

Michael D. Engelhardt

Dewitt C. Greer Centennial Professor

Department of Civil, Architectural and Environmental Engineering

COCKRELL SCHOOL OF ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN

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June 24, 2013

To: Sharon Wood, Chair, Dept of Civil, Architectural and Environmental Engineering
From: Desmond Lawler, Nasser I. Al-Rashid Chair in Civil Engineering and University Distinguished Teaching Professor
Re: Classroom visit of Dr. Chadi El Mohtar

I sat in on a lecture of Dr. El Mohtar in his CE 387L.1 class on October 3, 2012; the class is on the Consolidation and Shearing Properties of Soils. Fortunately, I kept good notes during my visit to the class so that, despite my tardiness in producing this report, I can portray with reasonable accuracy what happened in the class.

I arrived quite early and took up a seat in the back of the class to get a sense of the students as they came in. Chadi also arrived early and set up some music so that students walked into a classroom with some music playing; unbeknownst to me, the particular song that he chose was somehow actually related to the class content that day! Chadi started the lecture by asking who recognized the song and commented on its lines about "shifting sand" and its relevance to the lecture of the day. He also started with a fairly formal "Good Afternoon" to the class, and expected a similar response in return—I couldn't imagine doing this myself, but both he and the students seemed comfortable with it. Similarly, he expected everyone in the class to exclaim "Bless you" if anyone sneezed; I suppose it is nice to expect good manners, but I thought this was more distracting than helpful. Nevertheless, students seemed comfortable with it.

The lecture was prepared very well with an extensive set of PowerPoint slides. In some cases, he had left blanks for students to fill out as he went, and these points represented the major efforts at interaction in the class. His efforts to engage students via questions or these missing parts of some slides were reasonably successful, but not overwhelmingly so. It is difficult to say how this might be improved; it was clear that he was trying to keep the students intellectually engaged, but it was not effective for some in the class. I suggested to him after the class that he continue to try to develop the interactive nature of the class (but was not very specific as to how this could be accomplished).

A second method for interaction that Chadi used was the use of cards to answer certain types of questions. Each student has three small cards (say 3" x 5") and they can be used to answer yes/no questions (1 card for no, 2 cards for yes) or semi-quantitative questions (1 card for "less than," two for "equal," and three for "greater than." He used this a couple of times in the class period I witnessed, and again it was fairly successful but I think could have been better. Since the class was fairly large for a graduate class (about 25 students, I think), he was using this method to try to keep everyone engaged and active. I would recommend that, instead of having students hold up cards, Chadi would do better to call on people to tell him their vote and the reasoning behind their vote. Or, with the cards, he could have called on two people with different answers to have them elucidate their reasoning, and see if one could convince the other of his position. In short, I believe that he would do well to continue to develop methods of interaction that are more engaging and more lively so that a higher fraction of the class was actually taking part.

I can also say some more positive things about the conduct of the class. It was very clear that Chadi cared about the students, cared about the subject matter, and cared about his students learning the subject

matter. The topic of the day was an intellectually challenging one, and Chadi met that challenge and did an admirable job of getting the students to rise to meet that challenge as well. At one point, a student noted that most of the class was devoted to a one-dimensional formulation of the issue but, in reality, you have three-dimensional problems. Chadi did an excellent job of acknowledging the question, indicating how the math that he was doing was extended to the 3-D case. Later in the class, he referenced this question again, which I found to be very effective in taking advantage of the student's intellectual curiosity. Overall, he was enthusiastic and knowledgeable, and his ability to answer questions that students posed was particularly strong.

After class, I spoke with the one student in the class that I knew from his undergraduate days in our department. I just wanted to make sure that the class that I had witnessed was typical, and he assured me that it was.

In summary, I found that Dr. El Mohtar is a good and effective teacher; there is room for improvement, but many of the essential elements to being a great teacher are in place.

PEER EVALUATION OF TEACHING

Dr. Chadi S. El Mohtar
CE 375 – Earth Slopes/Retaining Structures
April 25, 2012



Observation and Evaluation by
Kenneth H. Stokoe, II

I attended Dr. El Mohtar's undergraduate class on Earth Slopes and Retaining Structures, CE 375, on Wednesday, April 25, 2012. This course is an elective course in the Civil, Architectural and Environmental Engineering program that can be taken by students in their third or fourth year after they have taken CE 357, Geotechnical Engineering. It is worth noting that I have taught this course several times and also the prerequisite, CE 357, numerous times in the past 37 years at the University of Texas.

Thirty-three students attended Dr. El Mohtar's lecture. Most of the students appeared to be happy and interested in the lecture. Dr. El Mohtar was well organized and at ease during the lecture. He had prepared notes and handouts which the students brought to class. He used a "tablet computer" to project and write on each handout during the lecture. Initially, he asked if there were any questions from the previous lecture or about the homework and he responded to the questions. He then outlined the lecture topic and began. The topic was designing the foundations of retaining walls to carry safely the loads applied by soil and surcharges behind the walls. He engaged the students during the lecture and courteously called on them by name. The students were comfortable with this interaction and enjoyed participating. Dr. El Mohtar had good eye contact and rapport. He illustrated the lecture topic with well-presented graphics and made sure the students understood the basic principles involved. Nearly all students remained interested and engaged throughout his lecture.

Overall, Dr. El Mohtar had a confident and helpful presence in the classroom. He was obviously interested in the students and in helping them to understand the subject. Multiple times he asked if there were any questions and several times the students had questions. I assess his classroom instruction very positively and feel the students were being well taught.

Peer Review of Teaching for Dr. Chadi El-Mohtar

Review Prepared

by

Dr. Robert B. Gilbert

Brunswick-Abernathy Professor in Civil, Architectural and Environmental Engineering

January 19, 2011



I conducted a peer review for Dr. Chadi El-Mohtar on December 1, 2010 in CE 357 Introduction to Geotechnical Engineering. It is a required undergraduate class with approximately 45 juniors in Civil and Architectural Engineering. The topic that day was the settlement of shallow foundations on clay.

The lecture was delivered well. Dr. El-Mohtar used PowerPoint slides that were printed by the students. He then filled in and explained details on the slides. The students paid attention and wrote the details in on their own set of notes. The pace and content of the lecture were reasonable.

Dr. El-Mohtar was effective at giving examples and asking questions to get the students to understand the fundamentals of soil mechanics. He reviewed basic ideas from previous lectures and then showed how they could be used in or adapted to engineering practice. For example, he worked with the students to extend the theory of one-dimensional consolidation to the three-dimensional consolidation that occurs below a footing foundation.

Dr. El-Mohtar successfully implemented several techniques to engage the students:

1. He had a rock song playing over the speakers when the students arrived before the bell rang. The song seemed to help the students relax and feel comfortable. When the bell rang, he turned the music off. The contrast in noise from music to silence was very effective in getting the attention of the students from the start. He then had students guess the name of the song. Finally, he explained how the name of the song was related to the lecture topic for that day. In summary, it was a very effective means to get the students actively participating in the lecture.
2. He took surveys during class so that everyone participated in answering questions. Each student had a set of cards. I was very surprised that nearly everyone came to class prepared with their cards. The cards had numbers on them. Dr. El-Mohtar would periodically ask multiple choice questions, and then have the students simultaneously raise cards to indicate what they thought was the correct answer. If there was much disagreement, he'd have a guided discussion with students explaining their opposing views. This discussion was a clever way to get the students to explain the answer to themselves in their own words; it was also an effective way for Dr. El-Mohtar to see if there were misconceptions. Finally, he'd take another survey. In each case during this lecture, the students ended up in unanimous agreement on the correct answer in the follow-up survey.

The one area where Dr. El-Mohtar can and will improve as he gets more experience as a teacher is in relating what they learned to the practice of geotechnical engineering. For example, he did not comment on whether the 10 inches of settlement that they calculated in their example would be tolerable for a typical building.

Overall, Dr. El-Mohtar was an effective teacher. He was clearly interested in having the students learn, and he was willing to be innovative in engaging them.

PEER REVIEW OF TEACHING

Department of Civil, Architectural and Environmental Engineering
University of Texas at Austin

REVIEW of CHADI EL-MOHTAR

Performed by David R. Maidment *David R. Maidment*
Hussein M. Alharthy Centennial Chair in Civil Engineering
19 October 2011

This peer review of teaching was performed for Chadi El-Mohtar in his teaching of the course: CE 387L.1 Consolidation and Shearing Properties of Soils (Unique No.: 16050) during the Fall Semester 2011. This is an introductory graduate course in Geotechnical Engineering covering the stress-strain, strength and consolidation properties of soils. I reviewed the course syllabus and attended a class on 19 October, which was concerned with "Terzaghi's Theory – Time Rate of Consolidation". There were 19 students in the class.

When I entered the classroom, there was some rather lively music playing, perhaps Egyptian in origin. Dr El-Mohtar began the class by turning off the music and then greeting everyone with a hearty "Good morning" to which he elicited a corresponding response of "Good Morning" from the class. Dr El-Mohtar works from a Tablet PC, and he had a set of 13 slides prepared as the background for his lecture. He was able to complete the presentation of ten of these slides during the 50 minute class period. Most of the slides were diagrams of soil consolidation situations, with blank graphs next to the pictures in which he would add detail to the image as he conducted the discussion. This might be compared with a traditional blackboard presentation where instead of having to draw diagrams on the board, he had them already drawn. There is definitely clarity and structure in this approach to exposition, although the limitations of the Tablet PC's capacity to reproduce lettering meant that I thought it might have been just as effective to leave the space for the graphs on the slides blank and just draw the graphs and do the lettering on the whiteboard next to the powerpoint projector image rather than doing it on the Tablet PC.

During the first part of the lecture, Dr El-Mohtar was presenting introductory concepts and there was a lively interaction with the students, who on a number of occasions spontaneously asked questions, and Dr El-Mohtar gave thoughtful responses. As the lecture progressed, it delved deeper into the theoretical aspects of the subject, where the students had less intuition, and it was noticeable that the level of questioning tapered off significantly. In the latter part of the class, the students were mostly in "receive" mode, absorbing information. At the end, there was a review of the assumptions involved in the analysis and there the discussion became more lively once again.

Dr El-Mohtar is an energetic teacher who clearly cares about the class. He has a laboratory section associated with the course in which groups of five students at a time perform laboratory experiments, such as defining the rate of consolidation. Dr El-Mohtar has scheduled each group of five students at a separate time and he spends three hours with each group in the laboratory doing the experiment. He shows them what is involved in the laboratory experiment but does

not require a full write up of the results because the laboratory is an add-on to a three credit course that already has three lecture hours per week. Hence, on weeks when he has a laboratory experiment scheduled, he has fifteen contact hours with the students, three in lecture and four sessions of three hours each in the laboratory. This is clearly dedicated teaching but I wonder if a graduate assistant might be able to perform the laboratory instruction duties instead of Dr El-Mohtar having to do this all himself.

In the course syllabus it is stated that "The Shearing Properties of Soils and the Consolidation and Settlement were covered at the University of Texas in lectures in CE 387L.I and CE 387R.I, respectively. This course will be an attempt to merge the 2 classes into one class to be more of an advanced Geotechnical Engineering class as compared to only shear strength or consolidation. While this merger would limit the topics covered and amount of time for each topic, it would help better provide a common base of knowledge of geotechnical engineering for all the graduate students in our group. This is critical for the more specialized classes offered here. The major topics in both shear strength and consolidation will still be thoroughly covered while the details of the laboratory testing will be moved to a separate course (CE 392L- Measurement of Soil Properties).

The course syllabus further states that: "You will be assigned a number of papers from the literature to read during the semester. Several advantages result from reading the original papers: (1) you see the original data; (2) you read views that may differ from those of the instructor and, thus, obtain a broader perspective; (3) you become accustomed to seeking information from the original sources, rather than from textbooks or class notes; (4) you learn to be critical of what you read; (5) you learn the names of people doing work in the field and develop opinions about their level of knowledge. The major disadvantage of reading the literature is that it is very time consuming."

I wonder if the overall scope and reach of this class is a bit more than an introductory graduate course might be expected to cover. I did not see mention of a textbook in the course syllabus and since this is an introductory class, I have a feeling that using a textbook might be a good idea. Having the students acquire their knowledge by reading original papers, and by doing laboratory experiments, are both good ideas, but these ideas might be spread over several graduate courses, one on introductory principles, and the later ones on delving into the literature and in getting laboratory experience.

My overall sense of this class and instructor is that Dr El-Mohtar is an enthusiastic teacher who has good communication with the students, and who is certainly dedicated to the idea that they should connect the theory they learn in the classroom with laboratory experience.

PEER EVALUATION OF TEACHING

Dr. Chadi S. El Mohtar
CE 357 – Geotechnical Engineering
November 19, 2010



Observation and Evaluation by
Kenneth H. Stokoe, II

I attended Dr. El Mohtar's undergraduate class on Geotechnical Engineering, CE 357, on Thursday, November 19, 2010. This course is a required course in the Civil, Architectural and Environmental Engineering program that is scheduled to be taken by students in their third year. It is worth noting that I have taught this course numerous times in the past 37 years at the University of Texas.

Twenty-four students attended Dr. El Mohtar's lecture. Most of the students appeared to be happy and interested in the lecture. Dr. El Mohtar was well organized and at ease during the lecture. He had prepared handouts which were posted earlier on Blackboard and the students came to class with them. He used a "tablet computer" to project and write on each handout during the lecture. Initially, he asked if there were any questions from the previous lecture or about the homework and he responded to the questions. He then outlined the lecture topic and began. The topic was designing shallow foundations to carry safely vertical structural loads. He engaged the students during the lecture and courteously called on them by name. The students were comfortable with this interaction and enjoyed participating. Dr. El Mohtar had good eye contact and rapport. He illustrated the lecture topic with well-presented graphics and made sure the students understood the basic principles involved. Nearly all students remained interested and engaged throughout his lecture.

Overall, Dr. El Mohtar had a confident and helpful presence in the classroom. He was obviously interested in the students and in helping them to understand the subject. Multiple times he asked if there were any questions and several times the students had questions. I assess his classroom instruction very positively and feel the students were being well taught.

EL MOHTAR, CHADI SAID

Engineering
Civil, Architectural and Environmental Engineering

09/02/14

Summary of Recent (All Years In Rank) UT Austin Course-Instructor Survey Results
Overall Course/Instructor Items

Semester	Course Number	Course Title	Enrollment		Instructor Averages*		College/School Averages**	
			No. of Students Enrolled on 12th Class Day	No. of Surveys Returned at End of Semester	Overall Instructor Rating Avg.	Overall Course Rating Avg.	Overall Instructor Rating Avg.	Overall No. Classes Surveyed
Fall 08	C E 357	GEOTECHNICAL ENGINEERING	34	33	3.4	3.2	N/A ***	N/A ***
Spring 09	C E 357	GEOTECHNICAL ENGINEERING	33	26	4.3	4.1	N/A ***	N/A ***
Fall 09	C E 387L	1-STRENGTH/SHEAR PROPS OF SOIL	27	26	3.2	3.2	N/A ***	N/A ***
Spring 10	C E 357	GEOTECHNICAL ENGINEERING	32	27	4.2	4.1	N/A ***	N/A ***
Spring 10	C E 375	EARTH SLOPES/RETAINING STRUCTS	27	22	3.8	3.9	N/A ***	N/A ***
Fall 10	C E 357	GEOTECHNICAL ENGINEERING	38	24	4.0	3.5	N/A ***	N/A ***
Fall 10	C E 387L	1-STRENGTH/SHEAR PROPS OF SOIL	14	14	3.7	3.4	N/A ***	N/A ***
Spring 11	C E 357	GEOTECHNICAL ENGINEERING	46	39	4.5	4.4	N/A ***	N/A ***
Fall 11	C E 357	GEOTECHNICAL ENGINEERING	36	29	4.7	4.2	N/A ***	N/A ***
Fall 11	C E 387L	1-CONSOL/SHEARING PROPS SOILS	20	20	3.6	3.4	N/A ***	N/A ***
Spring 12	C E 375	EARTH SLOPES/RETAINING STRUCTS	39	28	4.6	4.3	N/A ***	N/A ***
Fall 12	C E 387L	1-CONSOL/SHEARING PROPS SOILS	24	24	3.8	3.8	N/A ***	N/A ***
Spring 13	C E 357	GEOTECHNICAL ENGINEERING	45	37	4.1	3.8	N/A ***	N/A ***
Fall 13	C E 357	GEOTECHNICAL ENGINEERING	55	38	4.4	4.0	N/A ***	N/A ***
Fall 13	C E 387L	1-CONSOL/SHEARING PROPS SOILS	18	17	3.9	3.7	N/A ***	N/A ***
Spring 14	C E 357	GEOTECHNICAL ENGINEERING	47	43	4.0	3.7	N/A ***	N/A ***

*For the computation of the averages, points were assigned to student responses as follows:
Excellent = 5, Very Good = 4, Satisfactory = 3, Unsatisfactory = 2, Very Unsatisfactory = 1

**College/school averages are the average of class averages, based on all courses surveyed in the instructor's college or school during the academic year in which the course was taught.

***New CIS forms were implemented in the fall 2000 semester. The average rating on the overall course and instructor questions on the new Basic and Expanded forms have been found to be approximately 0.1 to 0.2 points lower than those ratings on the old Common form.

Prepared by the Measurement and Evaluation Center

Page 1

UNIVERSITY OF TEXAS AT AUSTIN
 El Mohlar, Chadi Said C E357 15990
 8000 Basic
 SURVEYED WITH: 15995 16000 16005 16010 16015

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Spring 2014 DEPARTMENT COPY
 Enrollment = 47
 Surveys Returned = 43

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	2	24	16	43	4.3
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	7	27	8	43	4.0
3 SHOWED INTEREST IN STUDENT PROGRESS	0	1	6	20	16	43	4.2
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	2	4	14	23	43	4.3
5 STUDENT FREEDOM OF EXPRESSION	0	2	3	21	17	43	4.2
6 COURSE OF VALUE TO DATE	0	3	13	19	8	43	3.7
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	1	10	20	12	43	4.0
8 OVERALL COURSE RATING	0	2	16	19	6	43	3.7
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	3	13	27	0	0	43	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	8	14	20	42	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	16	22	4	0	0	42	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 05/27/2014

Printed: 07/14/2014

UNIVERSITY OF TEXAS AT AUSTIN
 El Montar, Chadi Said C E367 15760
 8000 Basic
 SURVEYED WITH: 15765 15770 15775 15780 15785

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Fall 2013 DEPARTMENT COPY
 Enrollment = 54
 Surveys Returned = 38

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Dissg	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	1	18	18	38	4.4
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	1	21	15	38	4.3
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	3	10	25	38	4.6
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	3	8	27	38	4.6
5 STUDENT FREEDOM OF EXPRESSION	0	0	2	14	22	38	4.5
6 COURSE OF VALUE TO DATE	0	1	2	21	14	38	4.3
	Very Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	1	2	15	20	38	4.4
8 OVERALL COURSE RATING	0	1	6	24	7	38	4.0
	Excessive	High	Average	Light	Inauffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	17	20	0	0	37	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	6	16	16	38	
	A	B	C	D	E		
11 PROBABLE COURSE GRADE	21	13	3	0	0	37	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 01/14/2014

Printed: 03/03/2014

UNIVERSITY OF TEXAS AT AUSTIN
 El Mohtar, Chadi Said C E307L 15955
 B000 Basic

COURSE-INSTRUCTOR SURVEY
 1-CONSOL/SHEARING PROPS SOILS

Fall 2013 DEPARTMENT COPY
 Enrollment = 18
 Surveys Returned = 17

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	3	9	5	17	4.1
2 COMMUNICATED INFORMATION EFFECTIVELY	0	0	2	9	6	17	4.2
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	1	7	9	17	4.5
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	3	3	3	8	17	3.9
5 STUDENT FREEDOM OF EXPRESSION	0	0	2	6	9	17	4.4
6 COURSE OF VALUE TO DATE	0	0	0	7	10	17	4.6
	Very Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	0	5	6	4	17	3.9
8 OVERALL COURSE RATING	0	1	4	11	1	17	3.7
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	5	11	0	0	16	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	1	3	6	10	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	5	12	0	0	0	17	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 01/14/2016

Printed: 03/03/2014

UNIVERSITY OF TEXAS AT AUSTIN
 El Hachar, Chad; Said C E357 15560
 8000 Basic
 SURVEYED WITH: 15566 15560 15565 15570 15575

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Spring 2013 DEPARTMENT COPY
 Enrollment = 45
 Surveys Returned = 37

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	3	12	20	36	4.4
2 COMMUNICATED INFORMATION EFFECTIVELY	0	4	3	15	11	36	4.0
3 SHOWED INTEREST IN STUDENT PROGRESS	0	2	0	13	21	36	4.5
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	2	14	19	35	4.5
5 STUDENT FREEDOM OF EXPRESSION	0	0	3	12	21	36	4.8
6 COURSE OF VALUE TO DATE	1	1	5	13	16	36	4.2
7 OVERALL INSTRUCTOR RATING	Very Unsat	Unsat	Satisfact	Very Good	Excellent		
8 OVERALL COURSE RATING	0	2	7	15	13	37	4.1
	0	2	11	17	7	37	3.8
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic		
	1	15	20	1	0	37	
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
	0	2	7	17	11	37	
11 PROBABLE COURSE GRADE	A	B	C	D	F		
	16	17	1	1	1	36	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 03/05/2013

Printed: 03/15/2013

Student comments (if available):

Results

https://utdirect.utexas.edu/ci/ecis/results/results.WBX?website_swit...

UNIVERSITY OF TEXAS AT AUSTIN
 El Montay, Chadi Said C E387L 16875
 R000 Basic

COURSE-INSTRUCTOR SURVEY
 1-CONSOL/SHEARING PROPS SOILS

Fall 2012 DEPARTMENT COPY
 Enrollment = 24
 Surveys Returned = 24

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	3	9	12	24	4.4
2 COMMUNICATED INFORMATION EFFECTIVELY	0	2	7	10	5	24	3.8
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	4	7	13	24	4.4
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	11	12	24	4.5
5 STUDENT FREEDOM OF EXPRESSION	0	0	2	7	15	24	4.5
6 COURSE OF VALUE TO DATE	0	0	2	9	13	24	4.5
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	1	7	12	8	24	3.8
8 OVERALL COURSE RATING	0	0	11	6	7	24	3.8
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	5	15	3	0	24	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	0	7	13	20	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	12	11	0	0	0	23	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 01/18/2013

Printed: 11/06/2013

UNIVERSITY OF TEXAS AT AUSTIN
 El Ashkar, Chadi Said C 6375 15035
 B000 Basic

COURSE-INSTRUCTOR SURVEY
 EARTH SLOPES/RETAINING STRUCTS

Spring 2012 DEPARTMENT COPY
 Enrollment = 39
 Surveys Returned = 28

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	0	5	23	28	4.8
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	0	3	24	28	4.8
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	2	3	23	28	4.8
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	5	22	28	4.8
5 STUDENT FREEDOM OF EXPRESSION	0	1	1	5	21	28	4.6
6 COURSE OF VALUE TO DATE	0	1	0	7	20	28	4.8
7 OVERALL INSTRUCTOR RATING	Vry Unsat	Unsat	Satisfact	Very Good	Excellent	28	4.8
8 OVERALL COURSE RATING	0	0	1	10	17	28	4.8
	0	1	1	15	11	28	4.3
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic	27	
	1	5	21	0	0		
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00	28	
	0	2	8	11	7		
11 PROBABLE COURSE GRADE	A- 5	B- 15	C- 3	D- 1	F 0	28	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 05/22/2012

Printed: 07/13/2012

Student comments (if available):

UNIVERSITY OF TEXAS AT AUSTIN
El Mohitar, Chadi Said C E387L 10050

COURSE-INSTRUCTOR SURVEY
1-CONSOL/SHEARING PROPS SOILS

Fall 2011 DEPARTMENT COPY
Enrollment = 20
Surveys Returned = 20

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	4	9	8	22	4.0
2 COMMUNICATED INFORMATION EFFECTIVELY	1	0	3	14	2	20	3.8
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	2	7	11	20	4.5
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	5	14	20	4.7
5 STUDENT FREEDOM OF EXPRESSION	0	1	2	6	11	20	4.4
6 COURSE OF VALUE TO DATE	1	0	2	10	8	19	4.1
7 OVERALL INSTRUCTOR RATING	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
8 OVERALL COURSE RATING	1	0	8	12	1	20	3.8
	1	0	11	7	1	20	3.4
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic		
	1	7	10	1	1	20	
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
	0	0	0	7	7	14	
11 PROBABLE COURSE GRADE	A	B	C	D	F		
	5	8	2	1	0	16	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 12/15/2011

Printed: 02/21/2012

Student comments (if available):

UNIVERSITY OF TEXAS AT AUSTIN
 El Mohtar, Chad Said C 5357 15900
 8000 Basic
 SURVEYED WITH: 15905 15910 15915 15920 15923

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Fall 2011 DEPARTMENT COPY
 Enrollment = 35
 Surveys Returned = 29

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	0	3	26	29	4.9
2 COMMUNICATED INFORMATION EFFECTIVELY	0	0	0	13	16	29	4.6
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	1	10	18	29	4.6
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	7	21	29	4.7
5 STUDENT FREEDOM OF EXPRESSION	0	0	0	12	17	29	4.6
6 COURSE OF VALUE TO DATE	0	0	4	11	14	29	4.3
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	0	0	10	19	29	4.7
8 OVERALL COURSE RATING	0	0	2	19	8	29	4.2
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	9	20	0	0	29	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	5	6	11	7	29	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	11	15	2	1	0	29	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 12/15/2011

Printed: 02/21/2012

Student comments (if available):



UNIVERSITY OF TEXAS AT AUSTIN
 El Mhtar, Chad; Said C E337
 9000 Basic

10560

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Spring 2011 DEPARTMENT COPY
 Enrollment = 48
 Surveys Returned = 39

	NUMBER CHOOSING EACH RESPONSE					NO. REPLICS THIS ITEM	AVG
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	0	12	27	39	4.7
2 COMMUNICATED INFORMATION EFFECTIVELY	0	0	1	13	25	39	4.6
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	1	6	32	39	4.6
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	6	32	39	4.7
5 STUDENT FREEDOM OF EXPRESSION	0	0	1	7	31	39	4.6
6 COURSE OF VALUE TO DATE	0	0	5	11	23	39	4.5
7 OVERALL INSTRUCTOR RATING	Very Unsat	Unsat	Satisfact	Very Good	Excellent	39	4.8
8 OVERALL COURSE RATING	0	0	0	13	22	39	4.4
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic	39	
	0	8	30	1	0		
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00	39	
	0	1	9	19	12		
11 PRIORABLE COURSE GRADE	A	B	C	D	F	39	
	21	18	1	0	0		

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 05/13/2011

Printed: 07/08/2011

Student comments (if available):

UNIVERSITY OF TEXAS AT AUSTIN
 El Morfar, Chadi Said C E367
 BOOO Basic

15495

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Fall 2010 DEPARTMENT COPY
 Enrollment = 38
 Surveys Returned = 24

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	0	7	16	24	4.6
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	0	14	9	24	4.3
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	2	10	12	24	4.4
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	4	6	12	24	4.3
5 STUDENT FREEDOM OF EXPRESSION	0	0	1	7	16	24	4.6
6 COURSE OF VALUE TO DATE	0	0	3	12	9	24	4.3
7 OVERALL INSTRUCTOR RATING	Vry Unsat	Unsat	Satisfact	Very Good	Excellent	24	4.0
8 OVERALL COURSE RATING	0	1	5	12	6	24	3.5
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic	24	
	3	8	13	0	0		
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00	23	
	0	0	4	13	6		
11 PROBABLE COURSE GRADE	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>F</u>	24	
	5	16	3	0	0		

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 12/17/2010

Printed: 03/10/2011

Student comments (if available):

UNIVERSITY OF TEXAS AT AUSTIN
 El Moutar, Chad Said C E387L 15860

COURSE-INSTRUCTOR SURVEY
 1-STRENGTH/SHEAR PROPS OF SOIL

Fall 2010 DEPARTMENT COPY
 Enrollment * 14
 Surveys Returned * 14

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	1	2	5	5	14	4.1
2 COMMUNICATED INFORMATION EFFECTIVELY	0	2	4	5	3	14	3.8
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	4	5	5	14	4.0
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	2	3	7	2	14	3.8
5 STUDENT FREEDOM OF EXPRESSION	0	0	1	7	5	14	4.4
6 COURSE OF VALUE TO DATE	0	2	1	9	2	14	3.8
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	0	7	3	3	13	3.7
8 OVERALL COURSE RATING	0	1	7	5	1	14	3.4
	Excessive	High	Average	Light	Inauffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	5	5	0	1	14	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	0	3	8	9	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	5	5	1	0	0	13	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

Scanned: 12/17/2010

Printed: 03/10/2011

Student comments (if available):

*** PROVISIONAL REPORT ***

UNIVERSITY OF TEXAS AT AUSTIN
 Eli Mottler, Chadl Said C E357
 6000 Basic

15400

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Spring 2010 DEPARTMENT COPY
 Enrollment = 31
 Surveys Returned = 27

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	0	11	16	27	4.6
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	3	11	12	27	4.3
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	3	5	19	27	4.6
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	1	10	16	27	4.6
5 STUDENT FREEDOM OF EXPRESSION	0	0	2	15	10	27	4.3
6 COURSE OF VALUE TO DATE	0	0	2	14	11	27	4.3
7 OVERALL INSTRUCTOR RATING	Very Unsat	Unsat	Satisfact	Very Good	Excellent	27	4.2
8 OVERALL COURSE RATING	0	1	3	12	11	26	4.1
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic	27	
	0	6	20	0	1		
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00	25	
	0	1	5	11	9		
11 PROBABLE COURSE GRADE	A	B	C	D	F	25	
	9	13	3	0	0		

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

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Printed: 05/19/2010

*** PROVISIONAL REPORT ***

UNIVERSITY OF TEXAS AT AUSTIN
 El Mohlar, Ghadi Said C E375 15470
 B000 Basic

COURSE-INSTRUCTOR SURVEY
 EARTH SLOPES/RETAINING STRUCTS

Spring 2010 DEPARTMENT COPY
 Enrollment = 26
 Surveys Returned = 22

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	1	8	13	22	4.5
2 COMMUNICATED INFORMATION EFFECTIVELY	0	1	4	13	4	22	3.9
3 SHOWED INTEREST IN STUDENT PROGRESS	0	2	1	9	10	22	4.2
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	0	5	17	22	4.6
5 STUDENT FREEDOM OF EXPRESSION	0	1	5	5	11	22	4.2
6 COURSE OF VALUE TO DATE	0	0	2	12	8	22	4.3
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	2	5	10	5	22	3.8
8 OVERALL COURSE RATING	0	0	7	11	4	22	3.9
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	1	5	16	0	0	22	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	3	6	5	8	22	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	5	11	3	1	0	21	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

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Printed: 05/19/2010

*** PROVISIONAL REPORT ***

UNIVERSITY OF TEXAS AT AUSTIN
El Monte, Chad: Said C E387L 15885
8000 Basic

COURSE-INSTRUCTOR SURVEY
1-STRENGTH/SHEAR PROPS OF SOIL

Fall 2009 DEPARTMENT COPY
Enrollment = 27
Surveys Returned = 26

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG.
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	1	3	7	14	1	26	3.4
2 COMMUNICATED INFORMATION EFFECTIVELY	1	3	7	13	1	25	3.4
3 SHOWED INTEREST IN STUDENT PROGRESS	0	3	3	10	9	25	4.0
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	1	2	18	4	25	4.0
5 STUDENT FREEDOM OF EXPRESSION	0	0	3	13	10	26	4.3
6 COURSE OF VALUE TO DATE	0	0	3	18	6	25	4.1
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	0	3	18	4	2	25	3.2
8 OVERALL COURSE RATING	0	3	15	7	0	25	3.2
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	0	7	18	0	0	25	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	0	0	0	4	12	16	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	15	5	0	0	0	20	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

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Printed: 01/05/2010

*** PROVISIONAL REPORT ***

UNIVERSITY OF TEXAS AT AUSTIN
 El Nohtar, Chadi Said C E357 15220
 8000 Basic

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Spring 2009 DEPARTMENT COPY
 Enrollment = 33
 Surveys Returned = 26

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	0	0	1	8	17	26	4.6
2 COMMUNICATED INFORMATION EFFECTIVELY	0	0	1	15	10	26	4.3
3 SHOWED INTEREST IN STUDENT PROGRESS	0	0	0	7	19	26	4.7
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	0	0	0	7	19	26	4.7
5 STUDENT FREEDOM OF EXPRESSION	0	0	0	14	12	26	4.5
6 COURSE OF VALUE TO DATE	0	0	3	17	6	26	4.1
7 OVERALL INSTRUCTOR RATING	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
8 OVERALL COURSE RATING	0	1	0	15	10	26	4.3
	0	0	4	18	6	26	4.1
9 STUDENT RATING OF COURSE WORKLOAD	Excessive	High	Average	Light	Insuffic		
	2	5	19	0	0	26	
10 OVERALL UT GRADE POINT AVERAGE	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
	0	1	5	10	10	26	
11 PROBABLE COURSE GRADE	A	B	C	D	F		
	10	14	2	0	0	26	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

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Printed: 05/22/2009

*** PROVISIONAL REPORT ***

UNIVERSITY OF TEXAS AT AUSTIN
 El Mohter, Ouedi Said C E357
 B000 Basic

15740

COURSE-INSTRUCTOR SURVEY
 GEOTECHNICAL ENGINEERING

Fall 2008 DEPARTMENT COPY
 Enrollment = 34
 Surveys Returned = 33

	NUMBER CHOOSING EACH RESPONSE					NO. REPLIES THIS ITEM	AVG
	Str Disag	Disagree	Neutral	Agree	Str Agree		
1 COURSE WELL-ORGANIZED	1	1	5	16	10	33	4.0
2 COMMUNICATED INFORMATION EFFECTIVELY	3	5	7	17	1	33	3.2
3 SHOWED INTEREST IN STUDENT PROGRESS	1	1	2	11	18	33	4.3
4 ASSIGNMENTS AND TESTS RETURNED PROMPTLY	1	1	0	8	23	33	4.5
5 STUDENT FREEDOM OF EXPRESSION	2	2	4	15	10	33	3.9
6 COURSE OF VALUE TO DATE	3	5	6	13	6	33	3.4
	Vry Unsat	Unsat	Satisfact	Very Good	Excellent		
7 OVERALL INSTRUCTOR RATING	1	6	9	13	4	33	3.4
8 OVERALL COURSE RATING	1	6	14	10	2	33	3.2
	Excessive	High	Average	Light	Insuffic		
9 STUDENT RATING OF COURSE WORKLOAD	7	18	8	0	0	33	
	Less 2.00	2.00-2.49	2.50-2.99	3.00-3.49	3.50-4.00		
10 OVERALL UT GRADE POINT AVERAGE	1	1	4	14	13	33	
	A	B	C	D	F		
11 PROBABLE COURSE GRADE	11	17	5	0	0	33	

For the computation of averages, values were assigned on a 5-point scale so that the most favorable response was assigned a value of 5 and the least favorable response was assigned a value of 1.

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Printed: 12/18/2008

09/04/14
PROGRAM GSP8FRP3THE UNIVERSITY OF TEXAS AT AUSTIN
OFFICE OF GRADUATE STUDIES
COMMITTEE REPORT, MASTERS AND DOCTORAL
FOR EL MOHTAR, CHADIS

PAGE: 58

NAME	EID	LAST SEM	COMM POSITION	MAST OR DOCT	DEGREE	FIELD	YYS	2ND DEGREE	FIELD	YYS
AZHAR, WARDAB	wa2633	149	MEMBER	D						
BROWN, ANDREW CHARLES	acb427	136	MEMBER	D	PH.D.	CIVIL ENGINEE	20136			
CARPENTER, JUSTIN FORBES	jfc332	092	MEMBER	M	M.S.E.	CIVIL ENGINEE	20092			
CHEN, CHING-HSIANG	cc38479	139	MEMBER	D	PH.D.	CIVIL ENGINEE	20139			
CHEON, JEONG YEON	jyc338	109	MEMBER	D	PH.D.	CIVIL ENGINEE	20109			
DAS, JASASWEE TRIYAMBAK	jdk854	149	MEMBER	M						
EL-KHATTAB, MAY MOHAMMAD	mme539	136	CHAIR	M	M.S.E.	CIVIL ENGINEE	20136			
ELLIS, TRENTON BLAKE	tbe89	149	CHAIR	M	M.S.E.	CIVIL ENGINEE	20116			
ERTEN, MUSTAFA BAHADIR	mbe263	122	CO-CHAIR	D	PH.D.	CIVIL ENGINEE	20122			
GOFF, MARY KATHLYN	mkgs85	112	CO-CHAIR	M	M.S.E.	CIVIL ENGINEE	20112			
GORE, MATTHEW STEPHEN	msg989	149	MEMBER	D						
HEIDARI MOGHADAM, MAHDI	mh35954	139	MEMBER	D	PH.D.	CIVIL ENGINEE	20139			
HWANG, HANSIC	hh8293	102	CHAIR	M	M.S.E.	CIVIL ENGINEE	20102			
JUNG, CHANG MIN	cj7973	149	MEMBER	D						
KIM, SEUNG HAN	sk23439	106	MEMBER	D	PH.D.	CIVIL ENGINEE	20106			
KRONCKE, MARK WILLIAM	mwk343	092	MEMBER	M	M.S.E.	CIVIL ENGINEE	20092			
KWAN, WING SHUN	wk3547	149	CHAIR	D						
LEBLANC, MATTHEW THAD	mt1363	136	MEMBER	D	PH.D.	CIVIL ENGINEE	20136			
LEE, BOHYOUNG	b12286	149	MEMBER	D						
LYNK, JOHN MICHAEL	jm13337	099	MEMBER	M	M.S.E.	CIVIL ENGINEE	20099			
MACROWSKI, STEPHEN JAMES	sjm2276	092	MEMBER	M	M.S.E.	CIVIL ENGINEE	20092			
MATEREK, BRITAIN ANTHONY	bam2536	092	MEMBER	M	M.S.E.	CIVIL ENGINEE	20092			
MILLER, JAIME PAULINE	jpm795	092	MEMBER	M	M.S.E.	CIVIL ENGINEE	20092			
MIRABOLGHASEMI, MARYAM S.	msm3256	149	MEMBER	D						

09/04/14
PROGRAM GSPBFRP3

THE UNIVERSITY OF TEXAS AT JUSTIN
OFFICE OF GRADUATE STUDIES
COMMITTEE REPORT, MASTERS AND DOCTORAL
FOR EL MOHTAR, CHADIS

PAGE: 59

NAME	EID	LAST SEM	COMM POSITION	MAST OR DOCT	DEGREE	FIELD	YYS	2ND DEGREE	FIELD	YYS
NA, SUK JOON	sn5492	099	MEMBER	M	M.S.E.	CIVIL ENGINEER	20099			
NAIR, SRIRAMYA DUDOUKURI	sd23752	136	MEMBER	D	PH.D.	CIVIL ENGINEER	20136			
NAVIDI, SARA	sn2467	122	MEMBER	D	PH.D.	CIVIL ENGINEER	20122			
RITIKA	rs43382	149	CHAIR	D						
RUGG, DENNIS A.	dar2358	106	CHAIR	M	M.S.E.	CIVIL ENGINEER	20106			
SAYGILI, GOKHAN	gs2792	089	MEMBER	D	PH.D.	CIVIL ENGINEER	20089			
SPEARS, AMBER	as59526	142	CHAIR	M	M.S.E.	CIVIL ENGINEER	20142			
STROMBERG, MICHAEL PAUL	mps827	126	CHAIR	M	M.S.E.	CIVIL ENGINEER	20126			
SUNCAR, OSCAR ERNESTO	oes96	142	MEMBER	D						
TANG, YUCAO	yt2338	096	MEMBER	M	M.S.E.	CIVIL ENGINEER	20096			
TSIAPAS, IOANNIS	it2575	122	MEMBER	M	M.S.E.	CIVIL ENGINEER	20122			
WANG, YUBING	yw3678	142	MEMBER	M	M.S.E.	CIVIL ENGINEER	20109			
YATES, TREVOR BUTLER	tby65	116	MEMBER	M	M.S.E.	CIVIL ENGINEER	20116			
YOON, JISUK	jy264	119	CHAIR	D	PH.D.	CIVIL ENGINEER	20119			

Chadi El Mohtar

Postdoctoral Supervision

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN

Postdoctoral Fellows Supervision

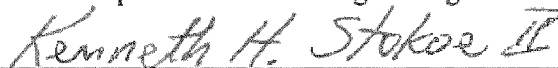
No Postdoctoral supervision
to report.

3. RESEARCH, PUBLICATIONS, AND OTHER EVIDENCE OF SCHOLARSHIP/CREATIVITY

Budget Council Statement

Prepared by

Dr. Kenneth H. Stokoe, II
Jennie C. and Milton T. Graves Chair in Engineering
Department of Civil Engineering



Overview

Professor El Mohtar is developing an important and emerging area in geotechnical engineering. This area deals with modifying in-place soils to improve their behavior during loading from natural sources (earthquakes, hurricanes, floods, etc.) and loading from the built environment. This problem has plagued civilizations essentially forever. In geotechnical engineering, this subject is commonly called "ground improvement" and, over the last 40 to 50 years, much of the knowledge in this subject has been empirically based and mainly in the domain of contractors who developed methods to densify, solidify or internally reinforce problem soils. Professor El Mohtar is one of a few researchers who are developing auto-adaptive solutions to mitigating these problems. This work is crucial to developing the necessary resilience in the built environment of the future and in remediating the deteriorating built environment that exists today. His research is forward looking in that he is trying to engineer pore fluids to fill the voids in the particulate soil skeleton and modify the skeletal response under adverse or extreme loading conditions. The ultimate goal is that pore fluids be environmentally friendly and function for the life of the structure. His work has focused on advancing a fundamental understanding of viscous flow in soils (porous media) by relating rheological properties of the fluids and suspensions to the mechanical and hydraulic characteristics of the soils. This fundamental research is, in large part, experimentally based. Professor El Mohtar has expended a great deal of time and effort in developing new equipment and testing techniques. He has been successful in his experimental endeavors and has begun contributing fundamental knowledge in this area. His work has been honored by two national awards, the Casagrande Award from ASCE and an NSF CAREER Award, clearly acknowledging his important contributions in this early stage of his career.

Faculty Reviewer

This review was prepared by Professor Kenneth H. Stokoe, II. Professor Stokoe has been a member of the faculty of The University of Texas since 1973 and has served as one of Professor El Mohtar's mentors for the Budget Council. Professor Stokoe is well known in the areas of soil dynamics, geotechnical earthquake engineering and field seismic testing. He was elected to the National Academy of Engineering in 1997 for his work in

these areas. He has interacted with Professor El Mohtar on teaching, experimental research activities, the preparation of journal articles, technical reports and professional presentations. Therefore, this review is based on first-hand knowledge of Professor El Mohtar's research and numerous technical discussions regarding research and scholarly activities. Professor Stokoe also reviewed Professor El Mohtar's vita and other information that he provided.

Norms of the Field

The criteria used to judge excellence in research, publications, scholarship, and creativity in an engineering discipline typically include: (1) publication of technical papers in refereed journals that are recognized as high quality in that discipline, (2) participation in important research conferences through presentations and conference proceedings papers, (3) acquisition of research funds, (4) awards and recognition from peer groups and leading organizations, (5) completed M.S. and Ph.D. supervisions, (6) willingness of other faculty and professionals to work with the individual, and (7) invitations to participate in conferences, meetings, research review teams, and professional committees. For those who have some component of their research activities in experimental work, it is very often necessary to design, fabricate and implement specialized laboratory or field equipment, usually requiring the services of highly qualified technical staff. This effort usually delays production and is not easily judged by the usual methods; a careful examination of the actual work required for each research project is necessary to fully judge the contributions being made in the early stages of one's research career.

The norms of co-authorship within the geotechnical specialization of civil engineering are such that faculty generally co-author papers with their students, with students often listed based on the intellectual contributions to the research, contribution of labor to the research, and contribution to the production of the publication itself. Students are often listed as the first author even though primarily the supervisor and other co-authors may have written much of the paper.

Significant Scholarly/Creative Contributions

Professor El Mohtar has 14 refereed publications in archival journals, 7 of which have been developed on topics different from those on which his Ph.D. was based. He also has 12 refereed publications in conference proceedings, 5 of which have been developed since his Ph.D. and are on topics different from his Ph.D. work. He also has 9 non-refereed conference proceedings. These numbers are comparable to or slightly greater than those of most researchers in the geotechnical engineering field who are at Professor El Mohtar's level, regardless of the nature of their research. However, the refereed papers are in four different and highly regarded journals, including: (1) ASTM Geotechnical Testing Journal, (2) ASCE Journal of Geotechnical and Geoenvironmental Engineering, (3) Clay and Clay Minerals, and (4) British Geotechnique Journal. These are excellent journals in areas in which Professor El Mohtar has been working.

Professor El Mohtar has been active in presenting the results of his research at technical meetings in the U.S. as well as at international conferences devoted to topics on which he has worked.

Professor El Mohtar has been successful in attracting \$1.73 million in research funding, with about \$1.09 million under his direct responsibility. The funding comes from diverse sources including Texas State Government (Texas Department of Transportation and Texas Hazards Waste Research Center), United States Government (National Science Foundation), and Industry (Geosyntec Corp., Fugro Consultants, and Wider Windows Joint Industry Project). These are excellent research funding agencies and industrial companies, in spite of the odds of obtaining funding being quite low.

Professor El Mohtar has been active in supervising students in research and has completed supervision of 2 Ph.D. students and 7 M.S. students. He has also supervised 15 undergraduate students on his funded research projects. He is presently supervising 3 Ph.D. students and 1 M.S. student and will hire at least 2 new graduate students in Fall, 2014.

Professor El Mohtar has also been honored in his short academic career at UT by two national awards: (1) the Casagrande Award from ASCE, and the (2) NSF CAREER Award. These awards at the start of an academic career clearly demonstrate the significant potential and high regard that Professor El Mohtar has already achieved.

Chadi El Mohtar

Five Most Significant Publications

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN

List of Five Most Significant Publications

Advisees' names are underlined; numbers between parentheses correspond to the paper numbers from the standard resume.

1. (3) Erten, M.B., Gilbert, R.B., **El Mohtar, C.S.**, and Reible, D.D. "Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments," ASTM Geotechnical Testing Journal: Innovations in Characterizing the Mechanical and Hydrological Properties of Unsaturated Soils, Vol. 34, No. 5, pp. 467-475, September 2011.
2. (6) Yoon, J. and **El Mohtar, C.S.** "Disturbance Effect on Time-Dependent Yield Stress Measurement of Bentonite Suspension," ASTM Geotechnical Testing Journal, Vol. 36, No.1, pp. 78-87, January 2013.
3. (9) Yoon, J. and **El Mohtar, C.S.** "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" Tunneling and Underground Space Technology, Vol. 37 p.p. 135–145, 2013.
4. (10) Yoon, J. and **El Mohtar, C.S.** "Dynamic Rheological Properties of Sodium Pyrophosphate-Modified Bentonite Suspensions for Liquefaction Mitigation," Clays and Clay Minerals, Vol. 61, No. 4, pp. 319-327, October 2013.
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Chadi El Mohtar

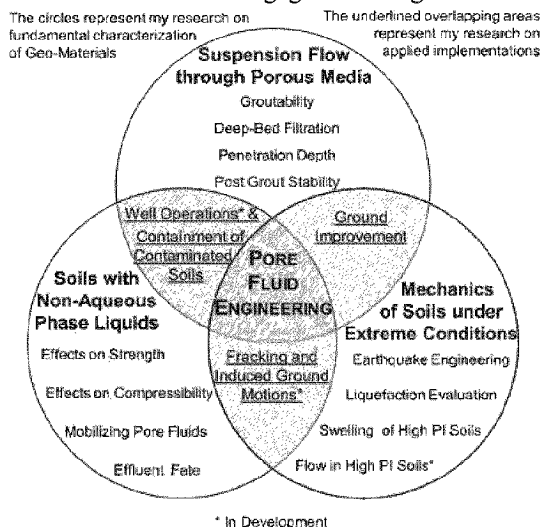
Research Statement

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Research Statement**

As a geotechnical scholar researching pore fluid engineering geotechnics, I have developed a research program focused on auto-adaptive solutions to mitigate the geo-challenges that face both existing and new infrastructures. My research involves engineering pore fluids and soils for resilient response to adverse and extreme loading conditions, and with minimal compromise to the performance under normal working loads. Specifically, my work has focused on advancing the fundamental understanding of viscous flow within porous media through relating rheological properties of fluids and suspensions to the mechanical and hydraulic characteristics of geomaterials. As part of my long-term career plan, I have started to expand my work on micro-mechanics of pore fluid-soil interaction from ground improvement contexts to include mobilization of non-aqueous fluids within porous media in geo-environmental and petroleum engineering applications. As such, my research integrates the areas of material science, rheology, deep-bed filtration, geotechnical, geo-environmental and petroleum engineering to 1) advance the fundamental characterization of geo-materials and 2) engineer optimal and sustainable solutions for existing geo-challenges. This is achieved through developing a fundamental understanding of the specific properties that control the geo-materials performance under project-specific conditions. This characterization requires performing specialty tests to measure the fundamental properties of individual materials, and an evaluation of their performance under the expected application conditions. So far, I have utilized traditional geotechnical testing, adopted “out-of-area” testing, such as advanced rheological testing and imaging, and designed new testing equipment and methodologies tailored to the unique nature of the testing required for each of my research focus areas. The chart on the right illustrates the overlap and interconnection between my main recent, ongoing and in-development research areas.

**Recent and Ongoing Research***(numbers between brackets correspond to the papers numbers from the standard resume)***Suspension flow through porous media**

Pore fluid engineering is a new approach for designing optimal solutions for mitigating geo-challenges. The fundamental idea is to alter the pore fluid within the soil to achieve the desired enhanced performance as opposed to the traditional approach where the soil structure is modified. A goal of pore fluid engineering is to design “smart” fluids with time-dependent adaptive properties that match the time frame of field application: low resistance to flow during permeation but high yield stress after delivery. However, current permeation grouting practice relies heavily on the field operation experience, whereas the science behind grout flow is not well understood from a fundamental perspective. This has often led to erratic and inconsistent field performance because of using erroneous grout properties such as particle size distribution and weight/volume concentrations. My current research implements more relevant rheological properties such as apparent viscosity and yield stress to characterize the grouts. Apparent viscosity is a measure of suspension resistance to flow as a function of shear rate, and is being investigated to capture the change in the suspension properties with injection rates and pore-voids size. On the other hand, yield stress indicates a phase transition from solid-like to liquid-like response and is being studied to evaluate the

stability/mobilization of suspensions already existing within porous media. We evaluated the effects of the rheological properties of suspensions on their flow through granular media using laboratory element testing under controlled conditions. The mechanisms governing the stability and persistence of the grouts in the pores are currently being evaluated for post grouting analysis and long-term stability of grouts. We have developed preliminary models that relate the groutability, filtration, penetration depth and long-term behavior of grouts, based on the engineering properties of the grout and porous media. The experimental data are being used to develop advanced models based on the micro-mechanics and force equilibrium between flow-induced stresses and rheological properties of the suspensions, while isolating the filtration effects using deep-bed filtration model.

My research team is using these advanced models to design appropriate grouts to improve the safety of levees. The levees system in the US is estimated at 100,000 miles stretching over all 50 states and the District of Columbia with its majority in bad conditions (the levees grade was D- in the 2013 ASCE report card). Based on past case histories, 80% of these levees are expected to fail due to under-seepage flow through a high permeability foundation layer. The current remediation practice is to build a slurry cutoff wall through the whole height of the levee and top soils to reach that layer. However, grouting the high conductivity layer underneath a levee would be a more efficient solution to reduce underseepage (the 2013 National Levee Safety Program estimated cost for the levees maintenance would exceed \$100 Billion). Installing a cutoff wall through the levee and top soil layer, just to treat the problematic layer, is the equivalent of performing open heart surgery to treat a blocked artery while grouting is more like placing a stent to fix the problematic area with minimal collateral interferences (ironically, in grouting we are trying to block flow). However, because of the low volume of voids in sand, concentrated bentonite suspensions are needed to deliver the required percentages of bentonite to reduce underseepage. These concentrated suspensions behave more like gels and would not flow in porous media and therefore, permeation grouting has not been used for this application. Based on the fundamental understanding of the suspension properties controlling its flow through porous media, my team was able to manipulate the rheology of bentonite suspension to achieve: 1) temporarily reduction in its apparent viscosity to improve its flow into the sand pores and 2) thixotropic recovery of its gel structure (high yield stress) to prevent it from washing out of the pores. Laboratory scale testing of grouted soils showed 5 to 7 orders of magnitude decrease in hydraulic conductivity, well beyond the required reduction needed to limit underseepage. This work has been funded by my NSF CAREER award and published in seven journal papers [6, 9, 10, 11, 13, 14 and 15] and two refereed conference proceeding [7 and 9].

Mechanics of Soils under Extreme conditions

Earthquake Engineering: My research in this area focuses on simulating realistic ground motions to determine the cyclic resistance of soils and their liquefaction potential. Current procedures for characterizing earthquake loading use an equivalent number of harmonic loading cycles to simulate a given ground motion. This procedure does not account for the effects of different time domain characteristics of the ground motions on excess pore pressure generation, and therefore, doesn't measure the response under in-situ loading conditions. The results to date show a significant discrepancy in the response of soils subjected to ground motions with different temporal characteristics, but similar equivalent number of loading cycles. This is a direct reflection of the nonlinear-frequency dependent response of soils and shows the need for new approaches for liquefaction evaluation.

Better characterization of the earthquakes would allow us to predict the soil response, but not limit the expected damage in liquefiable soils. Therefore, we have been researching the use of pore fluid engineering to reduce the cyclic and static liquefaction potential. Post-earthquake field observations indicate that the presence of plastic fines may increase the liquefaction resistance of cohesionless soils. The current work builds on the knowledge gained from suspension flow in porous media to deliver the required bentonite suspension into the liquefiable sand medium. Laboratory results showed an increase in both static and cyclic liquefaction resistance of grouted sands. The grouted sands present a unique geo-material within a geo-material, with both materials having extremely contrasting fundamental properties. The sand is a very stiff, frequency dependent and highly nonlinear elasto-plastic material even at small strain levels, while the grout is very soft, frequency independent with a linear elastic response (within the expected strains in the

sand). The research is currently in the early modeling stages of the coupled response under loading conditions. Designing a grout capable of permeating through liquefiable deposits can help increase the safety of urban areas in liquefiable zones without causing any disturbance to the existing structures. Such applications would help prevent disasters exemplified by the 2011 earthquake in Christchurch, New Zealand. This work has been funded by NSF and preliminary results are published in five journal papers [3, 7, 8, 12 and 15] and five refereed conference proceedings [3, 5, 8, 11 and 12].

High-Plasticity Clays: High plasticity clays (like central Texas soils) create challenges for designers since most design codes do not cover such extreme case materials. Particularly, the design of drilled shaft retaining walls in these expansive soils is challenging because the effects of soil wetting and drying over the long-term are not well understood. This results in having to make a wide range of assumptions, which can lead to over-conservative or under-conservative designs. The research team developed a research project that included constructing and instrumenting a full-scale drilled shaft retaining wall in the highly plastic Taylor clay in Manor, Texas. The behavior of this wall was then monitored and analyzed over 3.5 years. The shear strength and swelling behavior of the Taylor clay was measured in the lab to determine changes in properties under repeated swelling/drying cycles. These soil properties were used to analyze the field data and a new design guideline for drilled shaft retaining walls was proposed. This research was funded by Texas DOT and Fugro Inc. with Dr. R. Gilbert serving as PI and Dr. J. Zornberg and myself as co-PIs. One refereed conference paper has been published out of this work [6].

Soils with Non-Aqueous Phase Liquid (NAPL):

NAPLs are hazardous organic liquids that have accumulated in some sediments at the bottom of fresh water bodies as a result of past industrial activities. Disturbance of these sediments can lead to the release of the NAPL into the overlaying fresh water-bodies and therefore, containment of such sediments through in-situ capping is often desirable. One concern with in situ capping is that the additional load may cause consolidation-induced mobilization of NAPL, or even complete slope stability failure in case of inclined waterbeds. Therefore, it is important to understand the consolidation and shear strength of NAPL contaminated soils. These sediments are usually very soft, have very high porosities and are very compressible, which required modifying traditional consolidation and shearing equipment to accommodate them. The results of this work showed that improper cap design could lead to expelling of NAPL, depending on the initial NAPL saturation. The different soil structures developing in presence of NAPL versus water resulted in distinct discontinuities in a sediment's response (as a function of NAPL content) as the soil structure went from oil dominated to water dominated.

Once the mobility of NAPL was characterized based on the consolidation tests, a new "active" capping system was proposed to capture the released pore fluid using organoclays before it reaches the fresh water. This project provided for a unique collaboration effort between the Geotechnical Engineering group and the Environmental and Water Resources group at UT. The results of this study have gained wide interest and we've been since awarded a service contract to perform similar tests on contaminated samples from Gowanus Canal in New York city, NY to help with the design of the containment system. This project was jointly funded by the Texas Hazardous Waste Research Center and Geosyntec Consultants and the results have been published in two journal papers [3 and 5] and one refereed conference proceeding [10].

Research Vision Moving Forward

Continuing Current Research

The current work on suspension flow through porous media has generated a large data base of suspension properties and their performance in permeation testing. The preliminary empirical models developed are an improvement on the existing state of practice and have gained interest in the grouting community. For example, the paper published in *Tunneling and Underground Space Technology* (paper 9 on CV) received almost 50 views the first month, and an average of 29 views per month over the first year (record included in the Discretionary Supplemental Materials). That being said, there is still much more work to be done to develop models based on the micro-mechanics and force equilibrium between flow-induced stresses and rheological properties of the suspensions, while isolating the filtration effects using deep-bed filtration modeling. Such models will allow for numerical modeling of preferential flow of grouts in layered and

Chadi El Mohtar

Research Statement

heterogeneous soils and evaluation of the necessary grouting reliability to achieve the desired enhanced performance. The ultimate test for the success of pore fluid engineering is field applications and in-situ testing. I am in ongoing talks with senior engineers from Hayward Baker, a major contractor in the grouting industry, who showed interest in my research and plans are in progress for possible future collaborations on field implementation of these models. Also, the US Army Corps of Engineers has indicated that they allocated a “significant” budget to investigate new alternative methods for improving the safety of levees. I am currently pursuing this opportunity to partner with them.

In the area of earthquake engineering, the current work has set the foundation to move forward using ground-motions time histories for characterizing earthquakes and predicting pore pressure generation. The last NSF proposal submitted on expanding the current research received positive feedback and after further discussions with the program director, I will be resubmitting it in September 2014. The new proposed method will be the first approach that allows for predicting expected levels of post-liquefaction damage from a given ground-motion rather than evaluating liquefaction potential.

Vision for New Research

I see Petroleum Engineering operations as a natural extension to my current research applications. Bentonite suspensions, or drilling muds as referred to in petroleum engineering, have been used for decades in drilling operations. Despite their significant impact on the success of the drilling, loss of circulation, crack tip propagation/sealing and near-well formation properties, the characterization and design of the appropriate drilling fluid mostly rely on field experience and index tests. The infiltration of drilling mud below the bit, and into the wellbore wall, degrades the wellbore stability and induces fractures. These induced fractures open when the wellbore mud pressure exceeds the fracture gradient and can lead to high losses of wellbore fluid, and possibly wellbore collapse. I have been recently awarded a 3-year project in collaboration with Prof. K. Gray (PGE) to investigate the interaction between the drilling fluids and well formation from a combined rheological and physical context. I am also working with Prof. M. Prodanovic (PGE) on a proposal to be submitted to the Department of Energy on particulate transport and bridging mechanisms in hydraulic and natural fractures. Injecting packets of designed size distribution of suspended particulates will be investigated as a potential mechanism to create bridges in drilling-induced fractures that could increase hoop stresses around the well and reduce fluid pressure at the tip to reduce high fluid loss.

An additional promising research effort that is worth noting is my collaboration with Prof. A. Bhasin (CAEE) and Dr. J. Betak (McCombs) to start a railroad research program at UT. With the current demand for freight railroad and the increasing discussions about high-speed rail, I believe that there are many research opportunities in the near future. We have been working over the course of a year and a half to establish contacts with possible partners and we have worked on a few whitepapers together regarding the structure of the research program and the type of research conducted.

Summary

Over the course of the last six years, I have built an independent research program that focuses on the new concept of Pore Fluid Engineering. My research provides new alternatives and more sustainable solutions to relevant Geo-challenges through fundamental characterization of material properties under a given application conditions. I have also expanded my research by establishing interdisciplinary collaborations with colleagues in the CAEE and PGE departments. This was possible by having recruited a strong research team that has consisted of 5 PhD students (2 of whom have already graduated), 8 Masters students (7 of whom have already graduated), and 15 undergraduate research students. This research program has been supported by grants from industry (Geosyntec Corporation, Fugro Consultants, Inc., Wider Windows JIP), State agencies (Texas Hazardous Waste Research Center, Texas DOT), and Federal agencies (National Science Foundation) totaling in \$1.7M, with my share estimated at \$1.1M. In the upcoming years, I envision expanding this research to pursue advancements in the fundamental understanding and modeling of geo-materials as well as in their implementation into challenging geotechnical applications. This provides the opportunity for bolstering existing collaborations and creating potential new ones with faculty from CAEE, PGE, the UT GeoFluids Consortium and others.

Chadi El Mohtar

Research Summary Tables

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Research, Grants and Contracts**
Summary Tables**Table 1. Research Summary**

Metric	Value
Peer-Reviewed Journal Publications in Rank	14
Peer Reviewed Conference Proceedings Publications in Rank	9
Total Citations of all Publications (career)*	92
h-index (career)*	6
Google Scholar Total Citations of all Publications (career)	103
Google Scholar h-index (career)	6
Research Funding Raised (total share)	\$1,728,655
Research Funding Raised (candidate share)	\$1,089,519
Total Grants/Contracts Received	14
PI on Grants/Contracts Received	8

Table 2. Grants and Contracts Awarded while in Rank

Co-Investigators * = PI	Title	Agency	Project Total	Candidate Share	Grant Period
N/A	Lab Simulation of In-Situ Grouting for Liquefaction Mitigation	Office of Dean of Graduate Studies	\$17,556	\$17,556	06/09-07/09
D. Reible* and R. Gilbert	Effective Containment of NAPL in Sediments	Texas Hazardous Waste Research Center	\$67,500	\$11,250	09/08-08/10
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Texas DOT	\$731,754	\$243,918	09/09-08/13
R. Gilbert*	Consolidation and Shear Strength Testing of Contaminated Sediments	Geosyntec Corporation	50,000	25,000	09/09-08/11
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Fugro Consultants, Inc.	60,000	20,000	09/09-08/11
N/A	Measuring the Resilient Modulus For Port of Corpus Christi ¹	HVJ Associates – Austin, TX	\$4,313	\$4,313	05/10
N/A	Measuring the Shear Strength under Undrained Conditions ¹	GeoPentech, Santa Anna, CA	\$1,500	\$1,500	07/10
S. Kramer*, M. Khun, and E. Rathje (I am PI for the UT share)	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation	NSF/NEES	\$638,327 \$166,732 ^x	\$166,732	09/10-08/13
N/A	CAREER: Balancing Rheology and Filtration: An Experimental and	NSF	\$400,000	\$400,000	12/12-11/17

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Research Summary Tables

	Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media				
D. Reible*	Geotechnical Investigation of Gowanus Canal Sediments: NAPL Expression ¹	GEI Consultants	\$12,600	\$6,300	10/12-02/13
N/A	Measuring Shear Strength of Soft limestone rocks using DST ¹	Freese and Nichols Inc.	\$9,200	\$9,200	06/13-07/13
N/A	REU Supplement: CAREER: Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media	NSF	\$10,000	\$10,000	1/14-08/14
R. Gilbert	Effectiveness of Piezometers in High-Plasticity Clays	Geosyntec Corporation	47,500	23,750	09/13-08/15
K. Gray	Investigating the interaction between Drilling Fluids and Well Formation from a combined Rheological and Physical Properties Context	Wider Windows Joint Industry Project	\$150,000	\$150,000	08/14-07/17
TOTAL			1,729K	1,090K	

*Source:

☒ Publish or Perish☐ ISI Web of Knowledge

Chadi El Mohtar

Projects Division of Labor

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING

THE UNIVERSITY OF TEXAS AT AUSTIN

Projects Division of Labor

For each project, the relative distribution of effort between the PIs is listed. Additionally, my level of contribution towards the intellectual property and supervision of the research activities is listed based on a 3-level scale (primary, significant or supportive).

Co-Investigators * = PI	Title	Agency	Grant Period	Division of Labor
D. Reible* and R. Gilbert	Effective Containment of NAPL in Sediments	Texas Hazardous Waste Research Center	09/08- 08/10	<u>Equal distribution</u> between PIs. I made <u>primary</u> contribution to the design, supervision and analysis of the newly developed testing procedures contaminated soil performance.
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Texas DOT	09/09- 08/13	<u>Equal distribution</u> between PIs. I made: <u>primary</u> contribution to the design, supervision and analysis of the laboratory characterization of swelling soils; <u>significant</u> contribution to the design of the field experimentation site and monitoring; and <u>supportive</u> role in the final stages of field data analysis.
R. Gilbert*	Consolidation and Shear Strength Testing of Contaminated Sediments	Geosyntec Corporation	09/09- 08/11	<u>Equal distribution</u> between PIs. I made <u>primary</u> contribution to the design, supervision and analysis of the newly developed testing procedures contaminated soil performance.
R. Gilbert* and J. Zornberg	Long-Term Performance of Drilled Shaft Retaining Walls	Fugro Consultants, Inc.	09/09- 08/11	<u>Equal distribution</u> between PIs. I made: <u>primary</u> contribution to the design, supervision and analysis of the laboratory characterization of swelling soils; <u>significant</u> contribution to the design of the field experimentation site and monitoring; and <u>supportive</u> role in the final stages of field data analysis.
S. Kramer*, M. Khun, and E. Rathje (I am PI for the UT share)	NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation	NSF/NEES	09/10- 08/13	I was in charge of the <u>major part</u> of the UT share of the project with Dr. Rathje serving as an advisor. I made <u>primary</u> contribution to the design, supervision and analysis of the research.

Chadi El Mohtar

Projects Division of Labor

D. Reible*	Geotechnical Investigation of Gowanus Canal Sediments: NAPL Expression ¹	GEI Consultants	10/12-02/13	<u>Equal distribution</u> between PIs. I made <u>primary</u> contribution to the design, supervision and analysis of the newly developed testing procedures contaminated soil performance.
R. Gilbert	Effectiveness of Piezometers in High-Plasticity Clays	Geosyntec Corporation	09/13-08/15	<u>Equal distribution</u> between PIs. I made <u>primary</u> contribution to the design, supervision and analysis of the newly developed testing procedures contaminated soil performance.
K. Gray	Investigating the Interaction between Drilling Fluids and Well Formation from a combined Rheological and Physical Properties Context	Wider Windows Joint Industry Project	08/14-07/17	I am in charge of the <u>major part</u> of the project with Dr. Gray serving as an advisor. I am the <u>primary</u> contributor to the design, supervision and analysis of the research.

4. ACADEMIC ADVISING, COUNSELING, AND OTHER STUDENT SERVICES

Budget Council Statement

Prepared by Robert B. Gilbert



While in rank as an Assistant Professor, Dr. El Mohtar's record of academic advising compares favorably or exceeds that of others in our department at a comparable stage in their careers.

Dr. El Mohtar has taken an active role in advising and counseling both undergraduate and graduate students. He has mentored 15 undergraduate research assistants in the past five years, 10 from The University of Texas at Austin and five from the American University of Beirut. Four of these undergraduate students have now gone on to pursue graduate degrees. He has supervised two Ph.D. students (one co-supervised) who are both practicing now as successful consulting engineers and seven M.S. students. In addition, Dr. El Mohtar offers a valuable service to our graduate students by providing guidance to many of them who are performing laboratory testing in their research.

Throughout his tenure at UT, Dr. El Mohtar has served as the advisor for the graduate student chapter of the American Society of Civil Engineers Geo-Institute. This chapter consists of about 60 graduate students. Under his leadership, the students have been very active in interacting with engineering practitioners, hosting seminars and participating in Explore UT.

For the past two years, Dr. El Mohtar has served as the Graduate Admission Coordinator for the Geotechnical Engineering Group. Taking on this responsibility is not the norm for assistant professors. In this role, he processes about 100 applications, coordinates their recruiting visits, advises and mentors the new students until they have selected a supervisor, and advises all of the M.S. students who pursue a courses-only degree.

Dr. El Mohtar actively participates in the CAEE undergraduate advising process that provides counseling to both Civil Engineering and Architectural Engineering undergraduate students. This effort generally occurs twice a year in conjunction with pre-registration of courses.

Chadi El Mohtar

Department of Civil, Architectural
and Environmental Engineering

Chadi El Mohtar

Advising & Counseling Statement

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Advising, Counseling and Other Student Services Statement**

Faculty members play a major role in shaping the future of students by providing them with technical knowledge and by offering guidance on important career decisions. The guidance that I received from my mentors has helped me create a unique perspective about my life and career, and I strive to provide similar support to my undergraduate and graduate students. I classify my advising/counseling/mentoring activities at UT into two major categories (Direct Supervision and Indirect Supervision) based on the nature of my role and the level of involvement with the students (applies for both graduate and undergraduate students).

Direct Supervision

Mentoring and advising students under my direct supervision includes undergraduate and graduate students enrolled in my current courses, past students who took my courses and continued to seek my advice and mentorship afterwards, and students doing research under my supervision. During my tenure at UT, I have taught a total of 535 students (432 undergraduates and 103 graduate students) in 16 classes. Almost all of those students have talked to me during my office hours at least once during the semester; the majority of them had multiple visits throughout the semester. The discussions during these office hours often extend beyond the technical content of the course to career advice and mentoring. During my first introductory lecture to each class, I encourage students to stop by my office so that we can discuss any difficulties they are facing in my courses or the program in general. I jokingly remind them that individuals outside this classroom pay high consulting rates to be able to get CAEE faculty advice and they have the opportunity to get it at no additional cost and it is just a bad business model not to use such opportunities. I make a continuous effort to keep track of the progress of individual students. Whenever I notice students falling behind, I ask to meet with them to offer assistance. On multiple occasions, this led to putting the students in contact with officers at the UT Counseling and Mental Health Center (CMHC) where they were able to receive help and get back on track. Additionally, after each exam I assign extra office hours to give each student the opportunity to meet with me to go over their exam and discuss their performance. I take this opportunity to advise students on a range of topics from best methods to learn the material covered and time management during exams to the technical areas that they need to go back and work on.

A major part of my role as a faculty member at UT revolves around mentoring and supervising students' research. I take pride in providing all necessary mentoring and technical supervision to student doing research under my guidance. I have graduated two PhD students: Dr. J. Yoon (working for Fugro Consultants, Inc.) and Dr. M.B. Erten (co-advised with Dr. R. Gilbert and is working for Geosyntec Corporation). Currently, I am supervising two additional PhD candidates. Mr. W.S. Kwan is starting his fourth, and final, year, and Ms. R. Sangroya is starting her third year. This upcoming Fall, I will add one additional PhD student to my team. The new student will work on my new research project in collaboration with Prof. K. Gray in the Petroleum and Geosystems Engineering Department. Additionally, I have graduated seven Masters students (one co-advised with Dr. R. Gilbert) and am currently co-supervising an eighth student (co-advised with Dr. R.B. Gilbert).

Along with Graduate students, I was able to successfully recruit ten undergraduate students to join my research group, four of whom are current students and have expressed interest in pursuing graduate studies in Geotechnical Engineering at UT. Of the six past undergraduate students who already graduated, two ended up pursuing graduate school in Geotechnical Engineering. In addition to mentoring undergraduate students from UT, I supervised five visiting undergraduate students from the American University of Beirut, including one student during Summer 2014. Two of the past four visiting students ended up pursuing graduate studies in Geotechnical Engineering (one of them is joining the Geotechnical Engineering group starting Fall 2014).

Chadi El Mohtar

Advising & Counseling Statement

Indirect Supervision

I provide mentoring and advising to a number of students who are not under my direct supervision. I do this by advising for undergraduate and graduate (unsupervised students only) students, technical and research mentoring and advising for graduate students for whom I serve as a dissertation/thesis committee member, and members of the Geo-Institute Graduate Student Chapter for which I serve as faculty advisor. Excluding my first year at UT, I have participated in the department wide undergraduate advising during the Fall and Spring semesters. I always made sure to initiate discussions with the students to try to address any concerns they might have in their current courses and/or questions about different options for future courses and/or in their post-graduation careers.

Also, as part of my responsibilities as the Graduate Admission Coordinator for the Geotechnical Engineering group, I provide academic advising to all incoming graduate students and continue to advise them until they select a supervisor. I also serve as the academic advisor for all Masters students opting for the course-only Masters degree plan. In order to fulfill this role, I meet with each graduate student at least twice a year and go over their progress towards graduation. I discuss different courses that might be of interest to them while still satisfying their degree requirements. These meetings often extend beyond academic advising to general career advising, particularly for MS students debating continuing for a PhD or seeking industry jobs.

I have served on 16 PhD dissertation committees (excluding my own students' committees) and as a second reader for 14 Masters Theses of students in the Geotechnical Engineering group, other groups within Civil Engineering and other departments of the Cockrell School of Engineering. While serving on these committees, I have provided technical advising and mentoring to graduate students that I am not directly supervising. Students incorporating a significant experimental program as part of their research end up contacting me frequently requesting guidance and advice on laboratory work, as well as on topics related to shear strength and consolidation of soils.

Finally, serving as the advisor for the Geo-Institute graduate student chapter for the last six years has provided me with ample opportunities to guide and mentor graduate students and to help them work on developing their leadership and organizational skills. As their advisor, I share my input about events and activities they plan and act as a liaison for any collaboration between the student organization and faculty. I also help them with organizing activities for Explore UT, Reese Memorial Golf Tournament, among others.

Being able to provide mentoring and advising to undergraduate, graduate and visiting students at varying points in their degrees has been a rewarding experience for both the students and me. Our students will soon be our colleagues, whether as practicing engineers or academics/researchers, and how well we equip them for success will ultimately reflect on how we will be judged as individuals and as a group, department and college.

Chadi El Mohtar

Advising & Counseling Summary Tables

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Advising, Counseling and Other Student Services**
Summary Tables**Table 1. Summary of Academic Advising**

Metric	Value
Student Organizations Advised	1 (Geo-Institute Graduate Student Chapter)
Undergraduates Supervised	15
PhD Students Completed *	1.5 (1 sole advisor)
MS Students Completed*	6.5 (6 sole advisor)
PhD Students in Pipeline (as of 09/2014)*	3 (3** sole advisor)
MS Students in Pipeline (as of 09/2014)*	0.5

*count 1 if sole advisor, 0.5 if co-advised

** This number includes 1 PhD student that will be appointed to my new WW JIP project on 09/2014.

Table 2. List of Completed Graduate Students under My Supervision

Student	Co-Supervisor	Degree	Start Date	Dissertation/MS Thesis Date	Placement
Yoon, Jisuk		PhD	09/2007	12/2011	Fugro Consultants, Inc.
Erten, Mustafa	R. Gilbert	PhD	09/2008	05/2012	Geosyntec Corporation
Hwang, Hansic		MS	09/2008	05/2010	Lecturer, Korean Military Academy
Rugg, Dennis		MS	09/2008	08/2010	Golder Associates Inc.
Goff, Mary	R. Gilbert	MS	09/2009	05/2011	Kimley-Horn and Associates
Ellis, Trenton		MS	09/2009	08/2011	PhD student at UT
Stromberg, Michael		MS	09/2009	08/2012	Stromberg/Garrigan and Associates, Inc.
ElKhattab, Mai		MS	09/2011	08/2013	Arup
Spears, Amber		MS	09/2012	08/2014	NTH Consultants

Table 3. List of Undergraduate Students under My Supervision

Student	Degree	Semester of Research	Graduation Year
Jesse Kempf ¹	BS	Fall 2010	2011
Andrew Higgins ¹	BS	Summer 2011	2012
Edward Jaimes ¹	BS	Spring 2012	2012
Robert Green	BS	Spring 2012	2012
Abdallah Najdi ^v	BS	Summer 2012	2013
Mohamad Melhem ^v	BS	Summer 2012	2013
Christian Hogan	BS	Spring 2013	2013
Hamza Jaffal ^v	BS	Summer 2013	2014
Ali Srour ^v	BS	Summer 2013	2014
Osama ElQuqa ¹	BS	Spring 2014	2014
Patricia Bennett ¹	BS	Fall 2013	2015*
Abigail Kugel ¹	BS	Summer 2014	2015*
Brian Landry ¹	BS	Summer 2014	2015*
Masaaki Ward	BS	Summer 2014	2015*
Dany Hatoum ^v	BS	Summer 2014	2014

* indicates expected graduation date.

^v indicated visiting summer undergraduate research intern¹ indicates that the student signed up for an independent study class

5. SERVICE TO THE UNIVERSITY AND TO THE NATION, STATE AND COMMUNITY

Budget Council Assessment

Prepared by

Dr. Kenneth H. Stokoe, II
Jennie C. and Milton T. Graves Chair in Engineering
Department of Civil, Architectural and Environmental Engineering



Service to the University

Professor El Mohtar has been active and giving in his service to the CAEE Department and the Geotechnical Engineering Group, particularly over the past three years. He has served on four committees for the Department, including a faculty search committee and the Graduate Curricula and Policies Committee. Additionally, in 2009, he was an active member on the ABET Review Committee, a critical and highly time-consuming committee. He has served in three, one-person roles for the Geotechnical Group. These roles are advisor of the Geo-Institute Graduate Student Chapter (2008-present), graduate recruiting coordinator (2010-present) and graduate admission coordinator (2012-present). All positions require significant effort during different times of each academic year. In addition, Professor El Mohtar has devoted much time to improving the required laboratory manuals, equipment and experiments in our required undergraduate and graduate geotechnical classes (CE 357 and CE 387L, respectively). Clearly, Professor El Mohtar has performed an unusual amount of service as an assistant professor for the CAEE Department and Geotechnical Engineering Group.

Service to the Nation, State and Community

Professor El Mohtar has actively served our profession at all levels ranging from international to community levels. Internationally and nationally, he has co-organized one session and reviewed papers for three conferences. At the state level, he has organized sessions in two conferences and reviewed papers for several other conferences. He has devoted much time to two major professional organizations in geotechnical engineering, the Geo-Institute of ASCE and the Soil and Rock Committee (D18) of ASTM. He participates on three technical committees, is secretary of one sub-committee on dynamic soil properties and is chairman of a task group to develop a new ASTM standard. Additionally, at the community level, he is the organizer of our yearly Lymon C. Reese Memorial Golf Tournament in Austin. This tournament began in 2009 and creates much excitement and good will amongst our alumni and friends. Professor El Mohtar's service is equal to that of an active and contributing assistant professor.

Chadi El Mohtar

Service to the University, Nation, ...

CHADI S. EL MOHTAR, Ph.D.
 ASSISTANT PROFESSOR
 DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
 THE UNIVERSITY OF TEXAS AT AUSTIN

University, Nation, State and Community Services Statement

University Services

I have served the Department of Civil, Architectural and Environmental Engineering in several capacities. Since 2009, I have served on the Distinguished Lecture Series Committee, which has been a valuable opportunity for me to meet many of the most prominent scholars in Civil Engineering. I have also had the chance to nominate and invite a few scholars whose work I respect and value. In 2009, I served on the Geotechnical Laboratory Manager Hiring Committee. I was able to use my laboratory experience to discern the subtle differences between candidates in order to choose the best person for the job. Later, I also served on the Geotechnical Engineering Faculty Search Committee (2011-2012).

I have also served on educational committees, such as the Curriculum Committee (2009-2010), ABET Review Committee (2009), and Graduate Curricula & Policies Committee (2010-present). As part of my service on those committees, I have helped to prepare the necessary documents for our department's ABET accreditation. Specifically, Dr. J. Jirsa and I worked on Program Outcome #5: "Graduates of the Civil Engineering program should attain the following outcome: An ability to identify, formulate, and solve engineering problems". Additionally, as part of the Graduate Curricula and Policies Committee we are in charge of reviewing the applications and awarding the Kolodzey travel grants to CAEE graduate students. I have also been part of educational service to the Geotechnical Engineering group. Over the last five years, I have worked closely with the Geotechnical lab manager and the various Teaching Assistants to modify outdated laboratory manuals and design new experiments for CE 357: Geotechnical Engineering, a core Base level undergraduate course.

In addition to serving on various committees, I have also served as the geotechnical Engineering group Liaison with the External Advisory committee in 2008. I am the faculty advisor for the Geo-Institute Graduate Student chapter (2008-present), Graduate Recruiting Coordinator (2010-present) and the Graduate Admissions Coordinator for the Geotechnical Engineering group (2012-present).

As the faculty advisor to the Geo-Institute Graduate student chapter, I participate in organizing and attend most of the organizations' events. This includes the Geotechnical Engineering activities for Explore UT, where I proposed ideas and participated in the day long demonstrations. I also helped initiate and organize the Reese Memorial Golf tournament (2009-present) to honor the late Prof. Reese and raise funds for the Student Chapter. We were able to use these funds to cover a portion of the traveling costs for 11 graduate students to the 2014 GeoCongress in Atlanta, GA.

Additionally, starting in Fall 2012, I took over as the Graduate Admissions Coordinator for the Geotechnical Engineering group and was in charge of processing documents for over 100 applicants per year as well as managing fellowships, funding decisions and all correspondences. Another part of my role as Graduate Admissions Coordinator is responding to each individual inquiry about graduate school sent out to any of the Geotechnical Engineering Faculty. I have developed an organized system to respond in a timely manner while providing inquirers thorough and informative answers that reflect a favorable image of our program, thus sustaining the inquirers' interests.

Nation, State and Community Services

I have been a member of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), American Society of Civil Engineers (ASCE), Geo-Institute (GI) and American Society for Testing and Materials (ASTM) since 2009. A major part of my professional services center around my involvement with ASTM D 18 committee on Soil and Rock and ASCE GI Soil Properties and Modeling

Chadi El Mohtar

Service to the University, Nation, ...

Committee and Grouting Committee. Considering the heavy reliance of my research on experimental approaches, my involvement with ASTM has allowed me to make major contributions to various ASTM standards updates. In 2010, I was appointed as the secretary of subcommittee D18.09: Cyclic and Dynamic Properties of Soil in 2012. Additionally, I serve as the Chairman of the Task Group ASTM WK3805 in charge of developing a new standard for: Cyclic Simple Shear Test with Load Control and with Displacement Control. The standard draft has been through multiple revision cycles among the Task Group members and will be submitted for balloting in the near future.

As part of my activities in the Soil Properties and Modeling committee, I co-chaired a technical session at GeoCongress 2014 titled: Hydrocarbon Bearing Geomaterials for Sustainable Energy Production. Additionally, I organized a session of the 2013 ASCE Texas Section Fall Conference and Centennial Celebration focused on the Geotechnical Engineering Research at the University of Texas at Austin. My participation in the Grouting Committee (member since 2011) is unique and reflects the current state of grouting practice and research. Currently, I am the only active committee member from Academia/Research with the majority of the committee members represent contractors and to a lesser extent, consultants. This is unusual for Geo-Institute committees, which are mostly dominated by academic/research members. The grouting committee has not been active in recent years and lacked the leadership with interest in organizing technical sessions on grouting. During the last committee meeting, I was selected to Chair a subcommittee in charge of developing proposals for multiple technical grouting sessions for the 2016 GeoCongress that will be held in collaboration with the Structural Engineering Institute.

In addition to serving on multiple technical committees, I have served as a reviewer for multiple national and international conferences (International Foundation Congress and Equipment Exposition, 2009, Orlando, Florida; 17th International Conference on Soil Mechanics and Foundations Engineering, 2009, Alexandria, Egypt; GeoShanghai- International conference on Soil Mechanics, 2010, Shanghai, China; and Geofrontiers: Advances in Geotechnical Engineering, 2011, Dallas, TX); and technical journals (ASCE Journal of Geotechnical and Geoenvironmental Engineering, ASTM Journal of Testing Evaluation, ASCE Journal of Materials in Civil Engineering, and Soils and Foundations). I was also invited to serve on an NSF proposal review panels, both remotely and in person. Finally, part of my service includes providing specialized laboratory-testing services to multiple local and national companies through the Geotechnical Engineering Center.

**6. HONORS AND OTHER EVIDENCE OF MERIT OR RECOGNITION,
INCLUDING CONTRACTS AND GRANTS**

Budget Council Assessment

Prepared by

Dr. Kenneth H. Stokoe, II
Jennie C. and Milton T. Graves Chair in Engineering
Department of Civil, Architectural and Environmental Engineering



Evidence of Exceptional Academic or Professional Merit

Professor El Mohtar has received four prestigious awards during his time as an assistant professor in the Department of Civil, Architectural and Environmental Engineering at the University of Texas. In 2014, he was awarded the Arthur Casagrande Professional Development Award by the American Society of Civil Engineers (one award annually in the United States) for innovative contributions by young researchers (< 35 years old) in geotechnical engineering. He received the REES 2014 Faculty Grant Award from the American Railroad Engineering and Maintenance-of-Way Association (AREMA). In 2012, he received the distinguished National Science Foundation CAREER Award (one award is typically given nationally per year to faculty in the area of geotechnical engineering). In addition to these national awards, one of Professor El Mohtar's Ph.D. students won the Top Student Paper at the 7th International Conference on Remediation of Contaminated Sediments, further demonstrating Professor El Mohtar's position as a leading young investigator in geotechnical engineering.

Professor El Mohtar has presented more than 30 oral presentations at national and international meetings, workshops and universities. He has been particularly active in the Geo-Institute of the American Society of Civil Engineers and the American Society for Testing and Materials, being selected Secretary of an important ASTM committee on cyclic and dynamic soil properties and chair of an ASTM task group to develop a new standard for cyclic simple shear testing, a critical measurement method used in the evaluation of dynamic soil properties and liquefactions studies. Professor El Mohtar has been selected to review papers in some of the top journals in geotechnical engineering such as the ASTM Geotechnical Testing Journal, the ASCE Journal of Geotechnical and Geoenvironmental Engineering, and the Japanese Journal of Soils and Foundations. He has also been selected to serve on several NSF CMMI-GEOMM review panels.

Relative Prestige of these Honors and Activities

On a national scale, the ASCE Casagrande Award is normally presented to only one person per year so it identifies young people who are in the process of becoming national and international leaders in their field, as Professor El Mohtar is. The same prestige and competitiveness is associated with the NSF CAREER Award. The high regard for Professor El Mohtar's academic, research and professional activities by his peers, senior colleagues and practitioners is shown by the important assignments he has been asked to undertake such as chairing a task group to develop a new ASTM testing standard and writing a featured article on his research in GeoStrata the bi-monthly magazine of the ASCE Geo-Institute.

Success in Attracting Funding

Professor El Mohtar has been successful in attracting funding for his research, which is primarily experimental. During his time as an Assistant Professor, he has been the PI or co-PI on four large grants totaling \$1,920K with his share totaling \$960K. In addition, he has been the PI or co-PI on 10 smaller grants totaling \$280K, with his share totaling \$129K. The funding sources of these grants include federal, state and industrial entities.

Chadi El Mohtar

Honors and Evidence of Merit/Recognition

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN**Honors and other Evidence of Merit or Recognition, Including Contracts & Grants**

I have built a unique academic and research identity that simultaneously involves research and practice. I am honored that my efforts have been recognized by several organizations. For example, earlier this year, I was selected by the ASCE Geo-Institute Board of Governors to receive the 2014 Arthur Casagrande Professional Development Award for my contributions in “pore fluid engineering and the flow of viscous suspensions through porous media in ground improvement applications”. The Casagrande Award is internationally recognized as the highest accolade honoring young practitioners, researchers and teachers of geotechnical engineering. One junior geotechnical engineer is selected every year to receive this honor as a recognition of their outstanding accomplishments as evidenced by completed works, reports or papers in the field of geotechnical engineering. I have also received the distinguished CAREER Award from the National Science Foundation to support my research on understanding suspension flow and sustainability in porous media. Additionally, I received the REES2014 Faculty Grant Award from the American Railway Engineering and Maintenance-of-Way Association (AREMA). I have also been designated as an ASCE Excellence in Civil Engineering Education (ExCEEd) Fellow.

Throughout my career, I have been awarded research grants from industry and state and federal agencies. The diverse sources of funding reflect the range of my research focus: from understanding the basic fundamental science to developing practical solutions for problems facing engineers. This diversity is clearly highlighted by comparing: A) my NSF CAREER Award entitled “*Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Porous Media*” and focused on understanding the fundamental mechanisms governing suspension flow in porous media; and B) my most recent study funded by the Wider Window Joint Industry Project entitled “*Investigating the interaction between Drilling Fluids and Well Formation from a combined Rheological and Physical Properties Context*”, in which the same fundamental concepts as (A) are applied to understand challenges in oil drilling and well operations.

I’ve also been invited to give talks at three universities, as well as to serve as a technical committees member for the American Society of Civil Engineers Geo-Institute (GI) and American Society for Testing and Materials (ASTM). I currently serve as the Chairman of the Task Group ASTM WK3805 in charge of developing a new standard for the Cyclic Simple Shear Test. Starting in July 2012, I was selected to serve as the Secretary of ASTM subcommittee D18.09 on Cyclic and Dynamic Testing of Soils. The Committee Chair nomination cited my “participation in meetings over the past few years, help in reviewing standards, and taking on the development of the new cyclic simple shear standard are highly valued to ASTM and the success of the subcommittee”. Additionally, I was selected to serve on NSF proposal review panels, both remotely and in person.

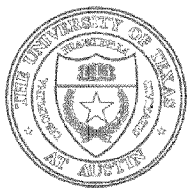
I was also invited to write a *featured paper* for the ASCE Geo-Strata. The paper entitled “Geoengineering of Contaminated Sediments” was featured in Volume 17, Issue 6, November-December 2013 (a copy of the article is included in the Supplementary Materials Discretionary Items). Also worth noting, my students’ paper: “Prediction of Penetration Length of Bentonite Slurry in Soil-Bentonite Slurry Walls” won the best student paper award at the 7th International Conference on Remediation of Contaminated Sediments in Dallas, TX, February 4-7, 2013. This award is particularly relevant given that few Geotechnical Engineering papers are accepted at a conference mostly attended by environmental engineering researchers.

Chart of External Reviewers
Chadi El Mohtar
Department of Civil, Architectural and Environmental Engineering

Name	Title	Institution	Chosen By Candidate/BC	Date Received	Reason for Declination
RECEIVED					
Boulanger, Ross	Professor	University of California-Davis	Budget Council	7/19/2014	
<p>Ross Boulanger is a professor and the director of the Center for Geotechnical Modeling at the Department of Civil and Environmental Engineering, University of California, Davis. He is a Fellow of the American Society of Civil Engineers and a member of the Board of Directors for the United States Society on Dams, among others. His research focuses on Geotechnical earthquake engineering with emphases on liquefaction and its remediation, seismic soil-pile-structure interaction, and seismic performance of earth dams and levees. He has received numerous awards including the ASCE Norman Medal, ASCE Huber Prize, and ASCE Casagrande Award. He has authored/co-authored one monograph and more than 215 technical papers, refereed conference proceedings and major reports.</p>					
Briaud, Jean-Louis	Professor	Texas A&M University	Budget Council	7/5/2012	
<p>Jean Louis Briaud is a professor and holder of the Spencer J. Buchanan Chair in the Department of Civil Engineering, Texas A&M University. He has served as the President of the ASCE Geo-Institute and the International Society of Soil Mechanics and Geotechnical Engineering. He is currently the President of the Federation of International Geo-Engineering Societies. He is a leading expert in the areas of foundations, retaining walls, in situ testing, scour of bridges and levee erosion. He has received numerous awards in recognition of his contributions including: ASCE Peck Lecture Award, Canadian Geotechnical Society Meyerhof Award, ASCE Kapp Award, ASCE Huber Prize, and ASTM Hogentogler Award. He has authored 2 books and co-authored 6 books, 200 journal and conference publications and 13 software</p>					
Burns, Susan	Professor	Georgia Tech	Budget Council	7/11/2014	
<p>Susan Burns is a professor and Associate Chair in the School of Civil and Environmental Engineering at the Georgia Institute of Technology. Her research focuses on geoenvironmental engineering, dredged sediments, erosion control, and the hydraulic conductivity/consolidation properties of fine-grained soils. She is the recipient of the NSF CAREER award, ASCE Casagrande Award, ASCE Friedman Award and she is a Fellow of the ASCE. She has served as the president of the United States Universities Council on Geotechnical Education and Research, and is a past member of the NRC Standing Committees on: Geological and Geotechnical Engineering; and Assessment of the Performance of Engineered Waste Containment Barriers. She has authored/coauthored more than 75 technical papers and conference proceedings.</p>					
Evans, Jeff	Professor	Bucknell University	Budget Council	7/20/2014	
<p>Jeffery Evans is a professor and past Chair of the Civil and Environmental Engineering department at Bucknell University. His research is focused on the fundamentals behavior of slurry trench cutoff walls, the physio-chemical effects of hazardous wastes upon soil and grout properties, the nature and applications of organophilic and zeolitic clays, and stabilization of petroleum sludge. He has received numerous awards for his research and teaching including ASCE Martin Award, Bucknell Presidential Professor Award, Fellow of ASCE and in 2012, the dedication of the Jeffery C. Evans Geotechnical Engineering Laboratory in his honor. He is the author/coauthor of 2 books and more than 170 technical papers conference proceedings and major contributor/editor of 11 more books/proceedings.</p>					
Germaine, John	Senior Lecturer/Senior Researcher	MIT	Candidate	8/13/2014	

Chart of External Reviewers
Chad El Mohtar
Department of Civil, Architectural and Environmental Engineering

	<p>Jack Germaine is a senior Lecturer/Senior Research Associate at the Department of Civil and Environmental Engineering, Massachusetts Institute of Technology. He also serves as the Co-Director of the UT GeoFluids Consortium at the Jackson School of GeoSciences and the Chair of ASTM Committee D18 on Soil and Rock. He is a world leader in experimental methods in geotechnical analysis, initial stiffness and small-strain nonlinearity of clay and laboratory and field instrumentations. He is the recipient of numerous honors and awards including the Hogentogler Outstanding Paper Award, Fellow of ASTM, ASTM Johnson Award and ASTM Standard Development Award (multiple times). He has supervised 29 PhD and 64 Masters students. He is the coauthor 1 book and more than 100 journal/conference papers.</p>		
Holtz, Robert	Emeritus	University of Washington	Candidate 7/14/2014
	<p>Robert Holtz is Professor Emeritus at the Department of Civil and Environmental Engineering, University of Washington. He is a Distinguished Member of ASCE and has served as the President of the ASCE Geo-Institute and the North American Geosynthetics Society. His research interests are geosynthetics, soil improvement, foundations, and soil properties. He is author/co-author/editor of 23 books and book chapters, including Introduction to Geotechnical Engineering (a widely used book in the United States), and more than 270 technical papers and major reports. He has received many awards including: the 46th Terzaghi Lecturer Award, Osterberg Geomechanics Award, Quigley Award, Puget Sound Academic Engineer of the Year Award, and Sir Casimir Gzowski Medal.</p>		
Hryciw, Roman	Professor	University of Michigan	Candidate 7/22/2014
	<p>Roman Hryciw is the Associate Chair of the Civil, Environmental Engineering at University of Michigan. He has served as ASCE Journal of Geotechnical and Geoenvironmental Engineering Editor-in-Chief and is currently serving as the Chair of ASCE Geoinstitute Technical Coordination Council (TCC). His expertise is in the areas of in-situ Testing, Soil Dynamics & Earthquake Engineering, Soil Improvement and Stabilization, Experimental Micromechanics, Image Processing, and Soil Testing System Development. He is the recipient of multiple awards including: ASCE Middlebrooks Award, North American Geosynthetics Society Grand Award, ASCE Casagrande Award and Robbins Excellence in Teaching Award. He is the author/coauthor of more than 110 technical journal papers and conference proceedings.</p>		
Jamolkowski, Mike	Professor	Technical University of Torino	Candidate 7/23/2014
	<p>Michele Jamolkowski is Emeritus Professor at the Technical University of Torino. Professor Jamolkowski is a Foreign Associate of the US National Academy of Engineering, the Polish Academy of Science and the Lagrangian Society of Science. He served as the President of the International Society for Soil Mechanics and Foundation Engineering and Chair of the International Committee for the Safeguard of the leaning Tower of Pisa. He is the recipient of numerous honors and awards including Honorary Doctorates from multiple universities, ASCE Terzaghi Award, ASCE Peck Award, Rankine Award, and the De Beer Prize. He has authored/coauthored more than 300 publications and is one of the most recognized and decorated international geotechnical engineers and scholars over the last 50 years.</p>		
Kavazanjian, Ed	Professor	Arizona State University	Budget Council 7/12/2014
	<p>Edward Kavazanjian is the Ira A. Fulton Professor in the Department of Civil, Environmental and Sustainable Engineering at Arizona State University. He is a member of the US National Academy of Engineering and Past-President of the ASCE Geo-Institute. He is the Chairman of the Geotechnical and Geological Engineering committee of the National Research Council. His research areas are geotechnical earthquake engineering, biogeotechnical soil improvement, waste containment, mechanical properties of municipal solid waste, erosion and sedimentation. He is recipient from ASCE Peck Award, Middlebrooks Award, and 47th Terzaghi Award. He is the author/coauthor of more than 200 technical papers, conference proceedings and book chapters, including design manuals for FHWA and EPA.</p>		
O'Rourke, Tom	Professor	Cornell University	Candidate 7/6/2014
	<p>Tom O'Rourke is the Thomas Briggs Professor of Engineering in the School of Civil and Environmental Engineering at Cornell University. He is a member of the US National Academy of Engineering and a Fellow of American Association for the Advancement of Science. He served as President of EERI, member of the NRC Geotechnical Board and member of the National Academies Committee for New Orleans Regional Hurricane Protection Projects. His research covers earthquake engineering, underground construction, large geographically distributed systems, and geographic information technologies. He has received numerous awards including ASCE Huber Award, ASCE Peck Award, ASTM Hogentogler Award, and Trevithick Prize (British Institution of Civil Engineers). He authored/co-authored over 300 technical publications.</p>		



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THE UNIVERSITY OF TEXAS AT AUSTIN

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Sample of Letter sent to referees

June 2, 2014

Dr. Ross Boulanger
University of California-Davis
Dept. of Civil & Environmental Engineering
One Shields Avenue
Davis, CA 95616-5294

Dear Professor Boulanger:

The Department of Civil, Architectural and Environmental Engineering is considering Dr. Chadi El Mohtar for tenure and advancement in rank to the position of Associate Professor at the University of Texas at Austin. We would appreciate your candid assessment of his scholarly contributions to assist our decision-making process. Excellent teaching is an important criterion for promotion, but our evaluation of teaching is being carried out separately, and we are asking you only for information about his scholarly distinction. Copies of Dr. El Mohtar's curriculum vitae and several recent papers are enclosed for your review.

To provide context, I should note that the University of Texas at Austin normally considers a faculty member for promotion to Associate Professor upon completion of five years in probationary status. Dr. El Mohtar has now accumulated five years of service in probationary status, so this review is taking place at the normal time for tenure evaluation.

We would appreciate your opinions regarding Dr. El Mohtar's major engineering and/or scientific contributions. In preparing your assessment, please consider the following questions:

1. Do you know Dr. El Mohtar, and if so, for how long and under what circumstances?
2. What are the original, innovative, and/or important contributions that he has made in his field of research? Have his publications influenced the thinking of, or the methods used by, others in your field?
3. How would you assess Dr. El Mohtar's development compared with others in his cohort at research-intensive universities?
4. What is your perspective on Dr. El Mohtar's promise for further professional growth and leadership?

We would be grateful for any additional comments you might have. The more specific you can be in your comments, the more helpful your evaluation will be.

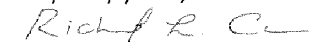
Under the laws of the State of Texas, Dr. El Mohtar has the right to request to see any materials in his personnel file, including your letter. Members of our faculty and internal review committees who see your letter as part of the promotion process will hold the comments you make in confidence, however.

For your comments to receive full consideration, we will need to receive a signed letter from you no later than July 15, 2014. It is not necessary for you to send us a hard copy of your letter, an electronic or scanned version is sufficient. However, we would appreciate receiving a copy that includes your institutional letterhead.

In addition, please enclose a copy of a short version of your curriculum vitae or résumé (preferably no longer than two pages) or the URL for your website where we may obtain this information. If you have questions, please call me at the number given on the letterhead.

We thank you for your time and assistance with this important matter. We realize that the amount of time required to do a thoughtful review is considerable.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Richard L. Corsi".

Richard L. Corsi, Ph.D., P.E.

Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering

Chadi El Mohtar

Five Most Significant Publications

CHADI S. EL MOHTAR, Ph.D.

ASSISTANT PROFESSOR

DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF TEXAS AT AUSTIN

List of Five Most Significant Publications

Advisees' names are underlined; numbers between parentheses correspond to the paper numbers from the standard resume.

1. (3) Erten, M.B., Gilbert, R.B., **El Mohtar, C.S.**, and Reible, D.D. "Development of a Laboratory Procedure to Evaluate the Consolidation Potential of Soft Contaminated Sediments," ASTM Geotechnical Testing Journal: Innovations in Characterizing the Mechanical and Hydrological Properties of Unsaturated Soils, Vol. 34, No. 5, pp. 467-475, September 2011.
2. (6) Yoon, J. and **El Mohtar, C.S.** "Disturbance Effect on Time-Dependent Yield Stress Measurement of Bentonite Suspension," ASTM Geotechnical Testing Journal, Vol. 36, No.1, pp. 78-87, January 2013.
3. (9) Yoon, J. and **El Mohtar, C.S.** "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" Tunneling and Underground Space Technology, Vol. 37 p.p. 135–145, 2013.
4. (10) Yoon, J. and **El Mohtar, C.S.** "Dynamic Rheological Properties of Sodium Pyrophosphate-Modified Bentonite Suspensions for Liquefaction Mitigation," Clays and Clay Minerals, Vol. 61, No. 4, pp. 319-327, October 2013.
5. (12) **El Mohtar, C.S.**, Bobet, A., Drnevich, V.P., Johnston, C.T., and Santagata, M.C. "Pore Pressure Generation in Sand with Bentonite: from Small Strains to Liquefaction," Geotechnique, Vol. 64, No. 2, pp. 108-117, February 2014.

UNIVERSITY OF CALIFORNIA, DAVIS

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ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-5294

July 19, 2014

Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin
Austin, TX 78715-1056

Subject: Promotion of Dr. Chadi El Mohtar to rank of Associate Professor

Dear Professor Corsi,

This letter is in response to your request, dated June 2, 2014, for my candid assessment of Dr. El Mohtar's scholarly contributions.

I know Dr. El Mohtar only through his published works and involvement in professional meetings. I have not worked directly with him in technical or service roles.

Dr. El Mohtar's record and publications show that he has made significant scholarly contributions related to viscous flow within porous media and rheological properties of fluids and suspensions, with applications to ground improvement by grouting and to geo-environmental and petroleum engineering problems. In reading the papers provided with his review package, I found that his four papers related to grouting demonstrated an ability to address issues of practical importance by exploring fundamental processes and behaviors. The paper by El Mohtar et al. (Geotechnique 2014) provided original insights on pore pressure generation in loose sands treated with small percentages of bentonite (as might be delivered by grouting) during cyclic loading at small to large strains, based on resonant column, static triaxial, and cyclic triaxial testing. The test data provided new understanding and quantification of how these effects varied with prolonged ageing before undrained shearing. The paper by Yoon and El Mohtar (TUST 2013) examined the effectiveness of sodium pyrophosphate as a modifying agent for bentonite suspensions to improve their depth of penetration during grouting in granular soils. Current grouting criteria do not account for the effects of grout rheology on the depth of penetration achievable with particulate grouts, and this paper provides insights on the fundamental effects of admixtures on grouting processes. The paper by Yoon and El Mohtar (CCM 2013) presented a fundamental examination of how the sodium pyrophosphate affected the rheological properties of the bentonite suspensions, which was an important step in supporting their studies of grouting processes. In addition, the paper by Yoon and El Mohtar (GTJ 2013) examined fundamental limitations in current experimental techniques for measuring the rheological properties of bentonite suspensions, including quantifying the role of test-induced disturbance on yield

Professor Corsi
July 19, 2014
Page 2 of 2

stress measurements for suspensions of different concentrations and ages and culminating in recommended procedures for obtaining better estimates of the true yield stress. The fifth paper in his review package, Erten et al. (GTJ 2011), examined consolidation behavior of NAPL contaminated soft clay at low effective stress using a modified triaxial setup. Mobile and immobile fractions of the NAPL were examined for both oil-wetted and water-wetted regimes. I found these five papers to be solid technical contributions and his 14 journal and more than 20 conference papers to be an appropriate and strong rate of publication.

Dr. El Mohtar's high standing in his discipline is evidenced by his receipt of an NSF CAREER Award in 2012 and ASCE's Arthur Casagrande Professional Development Award in 2014. In particular, the Casagrande Award usually recognizes only a single individual, 35 years of age or less, as being an outstanding practitioner, researcher, or teacher of geotechnical engineering in the USA. As such, this award recognizes him as being one of the top researchers in his peer group nationally.

Overall, I conclude that Dr. El Mohtar's scholarly record is strong and shows evidence of a high potential for continued intellectual and professional growth. He has made significant technical contributions in his areas of expertise and been active in publishing high-quality technical papers. He has been effective in guiding graduate students, obtaining funding (including NSF, TexDot, and industry funds), collaborating with colleagues, and providing appropriate levels of service in the academic and professional communities. He is nationally well known and respected. The breadth of his abilities and accomplishments suggest that he will continue to be a faculty member that your department and university will value.

I have absolutely no doubt that Dr. El Mohtar would be granted promotion to Associate Professor at my university based on his excellent record and its strength relative to others receiving such a promotion here and at other research intensive universities. If he were here, I would certainly vote in support of such a promotion without reservation.

I hope my comments will be of use in your deliberations. If you have any questions or would like additional information, please give me a call at (530) 752-2947 or email rwboulanger@ucdavis.edu.

Sincerely,



Ross W. Boulanger, Ph.D., P.E.
Professor of Civil & Environmental Engineering
Director, Center for Geotechnical Modeling

Peoples, Hortensia D

From: Ross W. Boulanger <rwboulanger@ucdavis.edu>
Sent: Saturday, July 19, 2014 5:50 PM
To: Peoples, Hortensia D
Subject: Re: Reminder - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: Boulanger_for_El-Mohtar_2014.pdf

Attached is my letter. Please let me know if you have any questions.

Regards,

Ross

On Thu, Jul 17, 2014 at 7:37 PM, Peoples, Hortensia D <hpeoples@mail.utexas.edu> wrote:

Dr. Boulanger,

The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Sincerely,

Richard L. Corsi, Ph.D., P.E.

Chair and ECH Bantel Professor for Professional Practice

Department of Civil, Architectural and Environmental Engineering

The University of Texas at Austin

corsi@mail.utexas.edu

Professor Ross W. Boulanger, Ph.D., P.E.

Department of Civil and Environmental Engineering
3151 Ghausi Hall
University of California
One Shields Avenue
Davis, CA 95616

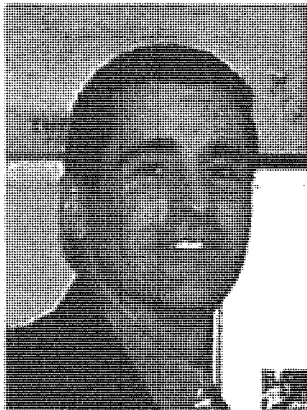
Email: rwboulanger@ucdavis.edu

Phone: (530) 752-2947

Website: <http://retrocee.engr.ucdavis.edu/faculty/boulanger/>

Research

Geotechnical earthquake engineering with emphases on liquefaction and its remediation, seismic soil-pile-structure interaction, and seismic performance of earth dams and levees.



Education

- Ph.D. University of California, Berkeley, CA, 1990
- M.S. University of California, Berkeley, CA, May 1987
- B.A.Sc. University of British Columbia, Canada, May 1986

Academic Appointments and Work History

- Director, Center for Geotechnical Modeling, Department of Civil and Environmental Engineering, University of California, Davis, CA (2009 – present)

- Professor (2002 – present), Vice-Chair (1998 – 2001), Associate Professor (1998 – 2002) and Assistant Professor (1992 – 1998), Department of Civil and Environmental Engineering, University of California, Davis, CA
- Consultant (1992 – present) to various geotechnical engineering firms and state and federal government agencies on a variety of geotechnical earthquake engineering and dam related problems.
- Senior Staff Engineer, Woodward-Clyde Consultants, Oakland, CA (1990 – 1992)

Awards and Honors

- Fellow, American Society of Civil Engineers (2012)
- Norman Medal, American Society of Civil Engineers (2006)
- Outstanding Paper Award, United States Society on Dams (USSD), 25th Annual Conference (2005)
- Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers (2002)
- Shamsheer Prakash Research Award, SP Foundation (2001)
- Arthur Casagrande Professional Development Award, American Society of Civil Engineers (1998)
- Distinguished Alumni Award, University College of the Cariboo, BC, Canada (1998)
- National Science Foundation CAREER Award (1995)

DWIGHT LOOK
COLLEGE OF ENGINEERING

Zachry Department of Civil Engineering
Construction, Geotechnical & Structural Division



4 July 2014

Professor Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
University of Texas at Austin

Dear Professor Corsi,

I am responding to your request to answer specific questions regarding Dr. El Mohtar's tenure candidacy. Also as requested I am sending separately a one page CV summary.

Question 1: Do you know Dr. El Mohtar, and if so, for how long and under what circumstances? I must say that I do not know Dr. El Mohtar very well. I have met him a couple of times and have engaged in discussion. I have known him for about 3 years. I have talked to him when he comes to the Buchanan lecture at Texas A&M University with Professor Olson and a good number of graduate students from UT. We appreciate their visit very much.

Question 2: What are the original, innovative, and/or important contributions that he has made in his field of research? Have his publications influenced the thinking of, or the methods used by, others in your field? Dr. El Mohtar research area is different from my research area so it is difficult for me to judge the contributions that he has made as a true expert in his field. Nonetheless, I will attempt to make relevant comments as someone who has seen many tenure cases over the last 35 years. The journals that he has published in are some of the best refereed journals in the world in geotechnical engineering (Geotechnique) and in soil science (Clays and Clay Minerals). Also he obtained the prestigious Career Award from NSF. Both achievements speak highly of his research contributions and his impact on his field as the reviewers for these publications and for the NSF award are true experts in his field and the competition is very tough.

Question 3: How would you assess Dr. El Mohtar's development compared with others in his cohort at research-intensive universities? If I define a scale of excellent, very good, good, fair, poor, I would respond to this question as follows. In terms of the quality of journals in which he publishes, I would say excellent as Geotechnique and Clays and clay minerals are excellent journals. In terms of the number of refereed articles published I would say very good. Thirty years ago, one refereed journal article per year was good enough, 20 years ago it became two, 10 years ago it rose to 3, and these days we are approaching 4. This is becoming ridiculous and I disagree with this trend but that is the data. In terms of research projects quality, I would say excellent mostly because of the NSF Career Award which is a huge result in itself in a very competitive environment. In terms of total funding amount I would say very good. In terms of awards, I would say very good to excellent because of the Cassagrande Award combine with the ASCE Exceed award and others. His number of graduated PhD students is a bit low with one PhD student graduated although it is a very productive student; I would say good. The service appears very good.

3136 TAMU
College Station, TX 77843-3136

Tel: 979 645 4515 Fax: 979 662 8162
<http://www.civil.tamu.edu>

**DWIGHT LOOK
COLLEGE OF ENGINEERING**

Zachry Department of Civil Engineering
Construction, Geotechnical & Structural Division



Question 4: What is your perspective on Dr. El Mohtar's promise for further professional growth and leadership? To get tenure in the top 10 geotechnical programs in the country today and according to the scale that I presented you need an average of at least very good. It is clear that Dr. El Mohtar has achieved that average in his contribution to our profession and I have no doubt that he would receive tenure at such institutions. He works in an important area of our field, he has the necessary qualities, both technical and human, to achieve long term success and I am confident that he will do very well.

Sincerely yours,

A handwritten signature in cursive script that reads "Jean-Louis Briaud".

Jean-Louis BRIAUD, PhD, PE, Dist. M. ASCE
President of FedIGS, Federation of International Geo-engineering Societies
Professor and Holder of the Buchanan Chair
Zachry Dpt of Civil Engineering, Texas A&M University
College Station, TX 77843-3136, USA
Tel: 979-8453795. Email: briaud@tamu.edu

3136 TAMU
College Station, TX 77843-3136

Tel: 979 845-4515 Fax 979 862-6162
<http://www.civil.tamu.edu>

Peoples, Hortensia D

From: Briaud, Jean-Louis <briaud@tamu.edu>
Sent: Saturday, July 05, 2014 10:21 AM
To: Peoples, Hortensia D
Cc: Stokoe, Kenneth H
Subject: Letter of Reference for Dr. Chadi El Mohtar
Attachments: Briaud letter for El Mohtar.pdf; Briaud-biodata-2014-Short.pdf

Dear Dr. Corsi,

Attached are the letter regarding Dr. El Mohtar and a one page CV.

Best wishes, Jean-Louis Briaud.

Author of "Geotechnical Engineering: Unsaturated and Saturated Soils."
Jean-Louis BRIAUD, PhD, PE, Dist M ASCE
President of FedIGS, Federation of International Geo-engineering Societies
Professor and Holder of the Buchanan Chair
Zachry Dpt of Civil Engineering
Texas A&M University
College Station, TX 77843-3136, USA
Tel: 979-8453795
Cell: 979-7771692
Fax: 979-8456554
Email: briaud@tamu.edu
URL: <http://ceprofs.tamu.edu/briaud/>

From: Peoples, Hortensia D [<mailto:hpeoples@mail.utexas.edu>]
Sent: Wednesday, June 11, 2014 5:30 PM
To: Briaud, Jean-Louis
Subject: Revised - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Importance: High

Hello again,

Unfortunately we inadvertently did not include some relevant information for your assessment in the previous CV. Please use this version for your assessment of Dr. El Mohtar. Thank you for your time in advance.

Hortensia

Dr. Briaud,

The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Biographical Data Summary**Jean-Louis BRIAUD****February 2014**

ADDRESS: Jean-Louis Briaud, Professor and Holder of the Spencer J. Buchanan '26 Chair, Dept. of Civil Engineering, Texas A&M University, 3136 TAMU, College Station, TX 77843-3136, USA. Tel: 979-845-3795, FAX: 979-845-6554, e-mail: briaud@tamu.edu

EDUCATION:

Ph.D. in Geotechnical Engineering, University of Ottawa, Canada, 1979.
M.S. in Geotechnical Engineering, University of New Brunswick, Canada, 1974.
Engineer Degree, Civil Engineering, E.S.T.P., Paris, France, 1972.

EXPERIENCE:***Educational Institutions***

Spencer J. Buchanan Chair in Civil Engineering, 2002-present.
Director, US National Geotechnical Experimentation Site (TAMU) for NSF and FHWA, 1992-present.
Spencer J. Buchanan Professorship in Civil Engineering, 1992-2002.
Program Manager, Geotechnical & Geoenvironmental Program, Texas Transportation Institute, 1989-present.
Area Leader, Geotechnical Engineering and Surveying, Texas A&M University, 1988-1993.
Assistant, Associate, then Professor of Civil Engineering, Texas A&M University, 1978-1982.
Lecturer, University of New Brunswick, Canada, 1974-1976.

Industrial

Geotechnical Consulting Work (1974-present). In several countries on various topics including bridge scour, slope stability, highway embankments, oil tank foundations, deep foundations, shallow foundations, docking facilities, tunnels, pressuremeter testing onshore and offshore.
President, Briaud Engineers, 1982-present.

PROFESSIONAL LICENSE

Registered Professional Engineer, State of Texas No. 48690.

SOCIETY PARTICIPATION

American Society of Civil Engineers,
President of Geo-Institute, 2008-09
Chair, ASCE Specialty Conference, "Settlement 94"
Chair, Shallow Foundations Committee, National, 1989-94
Director and President, Brazos Branch, 1982-85
Chair, Geotechnical Engineering Division, Texas Section 1982-83
Control Group Member, Deep Foundations, National, 1986-88
American Society for Testing Materials,
Chair, Pressuremeter Testing Subcommittee, National, 1986-91
Member, Deep Foundations, National Committee, 1986-91

International Society of Soil Mechanics and Geotechnical Engineering, Member, 1980-present

President of ISSMGE, 2009-13
Chair, Int'l Comm. on Scour of Foundations, 1997-present
Member, International Committee on Pressuremeters and Dilatometers, 1989-2001
USUCGER (US Assoc. of Geotechnical Professors)
President, 2003-05
Canadian Geotechnical Society, Member
President of Federation of Int Geo-eng Societies, 2014-17

HONORS, AWARDS, PATENTS

2014 President of FedIGS
2013 Louis Menard Honor Lecture - ISSMGE
2009 President, ISSMGE
2008 President, Geo-Institute of ASCE
2007 Ralph B. Peck Lecture Award (ASCE)
2006 Martin S. Kapp Foundation Engineering Award (ASCE)
2006 Martin S. Kapp Lecture, New York City
2006 G.G. Meyerhof Foundation Engineering Award (CGS)
Treasurer, Board of Governors, Geo-Institute-ASCE, 2004-07
President of USUCGER (US Assoc. of Geotech. Prof.), 2003-05
Spencer J. Buchanan '36 Chair in Civil Engineering, 2002-present
Invited lecturer at MIT, Berkeley, and in 40 countries
Many Named Lectures and Keynote Lectures
The TTI/Zachry Senior Researcher Award, 1998

Fellow of the American Society of Civil Engineers, 1993
International Who's Who of Intellectuals, 1993
Zachry Award for Excellence in Teaching, 1993
Spencer J. Buchanan Professorship, 1992-2001
Cross Canada Lecturer, 1992
TEES Fellow Award, 1988, 1990
Walter L. Huber Civil Engineering Research Prize, ASCE, 1987
Special Service Award, ASTM, 1987
Halliburton Award of Excellence, TAMU, 1985
Hogentogler Award, ASTM, 1981
The TEXAM Pressuremeter sold by ROCTEST, 1982
The WAK Test and the LATWAK Test, 1991
The EFA for soil erosion testing: sold by Humboldt, 2004
The BCD for compaction control: sold by ROCTEST, 2006

PUBLICATIONS

Books: 2 authored, 6 edited, 2 book chapters
Journal and Conference Papers - 207
Research Reports - 130
Software - 13
Presentations and invited lectures - 209

Videotapes: 11
Short courses and Webinars on In Situ Testing, Geotech Software, Bridge Scour, Shrink-Swell Soils

RESEARCH PROJECTS

82 research projects with 90 Master students and 51 Ph.D. students totaling over 10 million dollars on foundations, retaining walls, pavements, in situ testing, load testing, compaction, software development, scour of bridges, levee erosion, unsaturated soils.



School of Civil and Environmental Engineering

July 11, 2014

Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
University of Texas at Austin ECJ 4.200
301 E. Dean Keeton Street, C1700
Austin TX 78712-2100

Re: Tenure and Promotion for Dr. Chadi El Mohtar

Dear Dr. Corsi:

Thank you for the opportunity to submit a letter of reference for Dr. Chadi El Mohtar who is under consideration for promotion to associate professor with tenure. I am currently the Georgia Power Distinguished Professor of Civil and Environmental Engineering at Georgia Tech in Atlanta, where I also serve as Associate Chair for Undergraduate Programs in Civil and Environmental Engineering. I have known Dr. El Mohtar for approximately seven years, having interacted with him through professional events and committees through the American Society of Civil Engineers (ASCE) and the United States Universities Council on Geotechnical Education and Research (USUCGER). In addition, I am very familiar with Dr. El Mohtar's scholarship over the last decade, and am well qualified to comment on the quality of his work.

Dr. El Mohtar has established a strong research presence in geotechnical and geoenvironmental engineering, and he has demonstrated the ability to expand traditional research scopes into new and unique areas. I am most familiar with Dr. El Mohtar's work on the issues related to the engineering behavior and rheology of fine-grained soils, so I will comment specifically on that topic. Dr. El Mohtar's work on the engineering behavior and rheology of bentonite has been remarkably thoughtful and forward thinking, with emphasis on the fundamental, dynamic behavior of bentonite suspensions, modified with polymers and surfactants. This work is vitally important to our success in the development of more effective methods of permeation grouting and liquefaction mitigation, and Dr. El Mohtar's work represents a significant contribution to our understanding of how these materials will perform in enhanced ground improvement techniques. In his paper titled "Disturbance effect on yield stress measurement of bentonite suspension", Dr. El Mohtar's group developed a method to measure the aged and undisturbed yield stress of bentonite clays, which is a significant contribution to our understanding of the stability of injected grouts in soils. Additionally, in his articles titled "Dynamic rheological properties of sodium phosphate modified bentonite suspensions for liquefaction mitigation" and "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions", Dr. El Mohtar's

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Atlanta, GA 30332-0355 U.S.A.
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FAX 404.894.2281

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School of Civil and Environmental Engineering

group demonstrated experimentally that the normalized critical storage modulus of bentonite suspensions modified with sodium pyrophosphate degraded more slowly than that of the unmodified bentonite suspensions, which is important for applications in areas under seismic loading. These works also improved our understanding of the groutability of coarse-grained soils, using fundamental, rheology based criteria. The increased understanding gained from this work is critically important, as it gives insight into structure formed by the grouts during injection and facilitates an enhanced, theoretically based approach to soil behavior during ground improvement.

It is also important to note that the experimental work being performed by the El Mohtar group is performed on bentonite, a nanosized predominantly clay soil with high plasticity, which is exceedingly challenging to work with as a research material. Researchers working with bentonite must use meticulous methods, with complete attention to detail; consequently, due to the difficulty of working with this material, the experimental data are relatively sparse and Dr. El Mohtar's contributions represent an immense contribution to our field of knowledge. This same attention to detail is also reflected in his paper titled "Development of a laboratory procedure to evaluate the consolidation potential of soft contaminated sediments", which developed an apparatus to measure the compressibility of very soft, contaminated model sediments (kaolinite clay with oil). Due to the difficulty of making measurements on these very soft soils, his contributions to our experimental knowledge are invaluable and will make an enduring impact on geotechnical research.

Finally, Dr. El Mohtar's work titled "Pore pressure generation in sand with bentonite: from small strains to liquefaction" represents an important contribution due to its strong and carefully controlled experimental data set, combined with theory based analysis, founded on the fundamental principles of the engineering behavior of bentonite. This paper demonstrates the important impact of the aging of small percentages of plastic fines in a coarse grained soil subjected to dynamic loading. Dr. El Mohtar's work demonstrated that the gel like fluid phase formed by hydrated bentonite in the pore space of sandy soils is an important contributor to the soil's resistance to liquefaction due to the impact of aging of the clay in the pore space. This is a very important contribution to our ability to remediate infrastructure that is founded on liquefiable soil deposits.

In summary, Dr. El Mohtar has performed extremely well in his years as an assistant professor at the University of Texas. Dr. El Mohtar has established an active research group, and has a record of publishing his work in the highest quality research journals in our field. His rate of publication has been especially impressive given the inherent difficulty in establishing such meticulously detailed experimental work. He combines original thought with productivity and has developed research areas that will have long-term impact on our profession. I am certain his package would

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Atlanta, GA 30332-0355 U.S.A.
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School of Civil and Environmental Engineering

be well reviewed at Georgia Tech, and based on his excellent contributions to our profession, I give him my highest recommendation for both promotion and tenure.

Please do not hesitate to contact me if I can be of further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Susan E. Burns".

Susan E. Burns, Ph.D., P.E., F.ASCE

Georgia Power Distinguished Professor and Associate Chair for Undergraduate Programs

School of Civil and Environmental Engineering
Atlanta, GA 30332-0355 U.S.A.
PHONE 404.894.2285
FAX 404.894.2281

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Peoples, Hortensia D

From: Peoples, Hortensia D
Sent: Sunday, July 13, 2014 4:53 PM
To: Stokoe, Kenneth H; bob_gilbert@mail.utexas.edu
Subject: FW: Letter of Reference for Dr. Chadi El Mohtar
Attachments: C El Mohtar 2014 Burns.pdf, ATT00001.htm
Importance: High

From: Corsi, Richard L
Sent: Friday, July 11, 2014 7:24 PM
To: Peoples, Hortensia D
Subject: FW: Letter of Reference for Dr. Chadi El Mohtar
Importance: High

Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin

Civil, Architectural and Environmental Engineering - <http://www.caee.utexas.edu/> Twitter: @UT_CAEE

Co-Director, Center for Sustainable Development - <http://soa.utexas.edu/csd> Twitter: @UTSoA_CSD

From: Susan Burns [<mailto:susan.burns@ce.gatech.edu>]
Sent: Friday, July 11, 2014 3:03 PM
To: Corsi, Richard L
Subject: Letter of Reference for Dr. Chadi El Mohtar
Importance: High

Dear Professor Corsi,

Please find attached my letter for Dr. El Mohtar. I appreciate the invitation to submit the letter.

My bio and abbreviated cv can be found at:
<http://people.ce.gatech.edu/~sburns/Home.html>
<http://ce.gatech.edu/people/faculty/941/overview>

Please let me know if I can answer any questions.

Susan Burns

Susan E. Burns, Ph.D., P.E., F.ASCE
Georgia Power Distinguished Professor
Associate Chair for Undergraduate Programs

⌂ Susan E. Burns Georgia Power Distinguished Professor Associate Chair for Undergraduate Programs School of Civil and Environmental Engineering Geor...

Home **Professor** Pubs Group Research Teaching
Lab Testing Photo Album



Susan E. Burns
Georgia Power Distinguished Professor
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School of Civil and Environmental Engineering
Georgia Institute of Technology
Atlanta GA 30332-0355
(404) 894-2285 (v) (404) 894-2281 (f)
susan.burns@ce.gatech.edu

RECENT CAREER

Georgia Institute of Technology
Georgia Power Distinguished Professor, 2013-present
Associate Chair for Undergraduate Programs, 2013-present
Professor, 2010-present
Associate Professor, 2004--2010
School of Civil and Environmental Engineering

University of Virginia
Associate Professor, 2003--2004
Assistant Professor, 1997-2003
Department of Civil Engineering

Georgia Institute of Technology
Graduate Research and Teaching Assistant
School of Civil and Environmental Engineering
1992-1997

EDUCATION

Ph.D., Civil Engineering (Geotechnical)
Minor: Aqueous Geochemistry
Georgia Institute of Technology
September 1997

M.S., Environmental Engineering
Georgia Institute of Technology
June 1996

M.S., Civil Engineering (Geotechnical)
Georgia Institute of Technology
March 1996

B., Civil Engineering
Georgia Institute of Technology
December 1990

PROFESSIONAL REGISTRATION

Registered Professional Engineer, 032847
Commonwealth of Virginia

HONORS AND AWARDS

Fellow ASCE

<http://people.ce.gatech.edu/~sburns/Professor.html>[7/13/2014 4:54:38 PM]

☞ Susan E. Burns Georgia Power Distinguished Professor Associate Chair for Undergraduate Programs School of Civil and Environmental Engineering Geor...

American Society of Civil Engineers, Elected 2013

Class of 1934 Teaching Effectiveness Award
Georgia Tech, 2012

CEE Appreciation Award
School of Civil & Environmental Engineering, Georgia Tech, 2012

Class of 1969 Teaching Scholar
Georgia Tech, 2009-2010

Class of 1969 Teaching Fellow
Georgia Tech, 2005-2006

Alumni Board of Trustees Teaching Award
University of Virginia, 2001

CAREER Development Award
National Science Foundation, 2000-2004

Council of Outstanding Young Engineering Alumni
Georgia Tech, 2000

Edmund Friedman Young Engineer Award
American Society of Civil Engineers, 2000

Arthur Casagrande Professional Development Award
American Society of Civil Engineers, 2000

University Teaching Fellow
University of Virginia, 1999-2000

David Harrison III Award for Undergraduate Advising
University of Virginia, 1999

Graduate Traineeship
National Science Foundation, 1995-1997

Jean-Lou Chameau Student Research Excellence Award
Georgia Tech, 1996

George F. Sowers Distinguished Graduate Student Award
Georgia Tech, 1995

Outstanding Graduate Teaching Assistant
Georgia Tech, 1994

Blount Foundation Scholarship
Georgia Tech, 1985-1989

UNIVERSITY AND PROFESSIONAL SERVICE
At Georgia Tech (partial)

- Associate Chair for Undergraduate Programs, CEE (2013-present)
- Geosystems Group Leader, CEE (2012-2013)
- Graduate Coordinator, Geosystems Group, CEE (2005-2010)
- Chair, Graduate Committee, CEE (2006-2010)
- Member, Academic Senate and General Faculty Assembly (2007-2010)
- Advisor, Engineers without Borders, (2011-present)

Professional Service (partial)

- President, United States Universities Council and Geotechnical Education and Research (USUCGER)
(2005-2007)

<http://people.ce.gatech.edu/~sburns/Professor.html>[7/13/2014 4:54:38 PM]



Bucknell

Civil and Environmental
Engineering Department
Bucknell University
Lewisburg, Pennsylvania 17837

Phone: 570-577-1112
Fax: 570-577-3415

July 15, 2014

Cockrell School of Engineering
Department of Civil, Architectural and Environmental Engineering
Austin, TX 78712

Attention: Dr. Richard Corsi

Re: Evaluation of scholarship of Dr. Chadi El Mohtar

Dear Corsi:

In response to your letter of 2 June 2014, this letter provides an evaluation of the scholarship of Dr. Chadi El Mohtar as he is being considered for promotion to the rank of associate professor with tenure. This letter was prepared using the information provided in your letter and the accompanying documentation. As per your request, I've included a copy of my most recent CV with this submittal. I will note that Bucknell University has a university level committee to assess candidates for promotion and tenure that is constituted with our Provost, two Deans and four elected faculty members. I have served two terms on this committee and have chaired the committee on two separate occasions. Also, in the past, I have been asked to evaluate a number of candidates being consider for promotion to associate professor with tenure and for promotion to the rank of full professor. As a result, I believe I have an unusually high level of experience in evaluating dossiers for promotion and tenure. I've also learned that the stronger the case, the less that needs to be said in support of the candidate.

I don't recall meeting Dr. El Mohtar although our paths may have crossed at an ASCE GI meeting or in my role as Board President of USUCGER. I know two of his co-authors from five of the significant papers provided for my review (Drnevich and Gilbert).

In considering you question of whether Dr. El Mohtar's work is original, innovative and important, I considered his five publications to be in three distinct areas. The first area, dealing with bentonite suspensions, has two publications all co-authored with his Ph.D. student. I noted his student, Yoon is first author but took that to be out of professional courtesy and assume the intellectual leadership came from Dr. El Mohtar. While I had not made use of his work prior to this time, that is not a reflection on the work but rather the areas of scholarship I have been working on since these three papers were published in 2013. In taking the time to review these three papers I found them to be well-written, thoroughly referenced, largely experimental and offering the potential for contributions primarily in the field of grouting. In fact, I am currently under contract with Taylor and Francis to produce a textbook on Ground Improvement Engineering and intend to incorporate Dr. El Mohtar's work in the chapter on grouting yet to be written. Of particular importance is his finding that small amounts of sodium pyrophosphate can improve grout penetration and I believe these findings will find there way into grouting practice. In what I considered a second area of research, liquefaction mitigation, he has extended his understanding of bentonite suspensions by creatively considering their use in liquefaction mitigation in two papers. He has further demonstrated his strength as an experimentalist in these two

papers again produced high quality data and quantitatively demonstrated his hypothesis that indeed bentonite and bentonite suspensions can have a positive effect in increasing resistance of sand to liquefaction. Finally, his third area on the consolidation of soft contaminated sediments, is quite different than the previous two areas and co-authored with a different cohort. This breadth of research areas demonstrates a welcome depth of intellect and ability to productively collaborate with others. Technically, I found this largely experimental paper to be interesting and address an important issue in environmental geotechnics regarding the migration of NAPL during consolidation. Given the paper has five co-authors; it would be useful to the review committee to have a clear understanding of the intellectual contribution of Dr. El Mohtar on this work.

Assessing research productivity at research-intensive universities is difficult for me since Bucknell is a PUI with a small MS program. That said, Dr. El Mohtar's CV shows 12 journal articles and numerous other publications. Among the other publications are those from the annual meeting of the ASCE GeoInstitute. While these publications do not "count" as much as journal articles, I believe them to be critically important to Dr. El Mohtar's professional growth and they enhance both his reputation and that of UT Austin. Taken in its entirety, Dr. Mohtar's development and productivity is on par or beyond that of his cohorts at other research-intensive universities.

Promise for further professional growth and leadership is perhaps the most important aspect in assessing a candidate for promotion and tenure. Evidence for success in this area is abundantly obvious in his CV. While I will not repeat all items indicative of professional growth and leadership, several items jump to the forefront. These include his participation in ExCEED, his CAREER award, NSF panelist and reviewer, session organizer for ASCE GI, conference and journal paper reviewer, and numerous service activities for UT Austin. All in all his CV shows a committed and productive professional taking on substantial leadership roles early in his career.

I hope this letter is satisfactory for you purposes. If you have any further questions, please feel free to contact me.

Sincerely,
BUCKNELL UNIVERSITY



Jeffrey C. Evans, Ph.D., P.E.
Professor
Department of Civil and Environmental Engineering

Peoples, Hortensia D

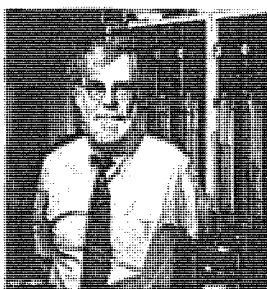
From: Jeffrey Evans <evans@bucknell.edu>
Sent: Sunday, July 20, 2014 9:53 AM
To: Corsi, Richard L
Cc: Peoples, Hortensia D
Subject: Re: review of Dr Mohtar
Attachments: Evans review letter for Mohtar 15 July 14.pdf; ATT00001.htm

Hi Rich,

Sorry for the delays.

Please find attached my letter and let me know if you have any questions or need any additional information.

Jeff



Jeffrey Evans, Chair and Professor, Department of Civil and Environmental Engineering, Bucknell University, Lewisburg, PA 17837
Telephone: 570-577-1112
Email: evans@bucknell.edu

EDUCATION

Lehigh University: Ph.D., Civil Engineering
Purdue University: M.S Civil Engineering
Clarkson University: B.S., Civil and Environmental Engineering

PROFESSIONAL HISTORY:

Bucknell University, Department of Civil and Environmental Engineering
Chair and Professor, 2003-present
Presidential Professor, 2001-2003
Professor, 1994-2001;
Associate Professor, 1986-1994;
Assistant Professor, 1985-1988
Cambridge University, Academic Visitor & Overseas Fellow (Churchill College), 2012-12 (sabbatical)
Colorado State University, Affiliate Professor of Civil and Environmental Engineering, 2002-present
University of Nottingham, Nottingham, England, Visiting Academic, 1998-1999 (sabbatical)
Warren Spring Laboratory, Stevenage, England, Sr. Scientific Officer, 1991-1992 (sabbatical)
Lehigh University, Adjunct Associate Professor of Civil Engineering, 1984-1985
Woodward-Clyde Consultants, Staff, Project and Senior Project Engineer, 1975-1985
U.S. Army, Corps of Engineers Reserves, 2nd Lieutenant, 1st Lieutenant and Captain, 1973-1981
Purdue University, Teaching Assistant, 1973-74
Mobile Drilling Company, Research Engineer, 1974
Karteganer Associates, Staff Engineer, 1973

RESEARCH:

Geotechnical engineering, environmental geotechnology; ground improvement engineering, engineering graphics with computer-aided drafting, science of materials, comprehensive senior design.

AFFILIATIONS:

American Society of Civil Engineers
American Society of Testing and Materials
ADSC: The International Association of Foundation Drilling

Chi Epsilon: National Civil Engineering Honor Society

HONORS and AWARDS:

The Jeffrey C. Evans Geotechnical Engineering Laboratory endowed and dedicated in 2012 by Michael J. Costa '91 and Laureen Leptinski Costa, '90.

American Society of Engineering Education, Civil Eng. Div., 2008
Glen L. Martin Best Paper.

Bucknell University, Presidential Professor, 2001 to 2003.

Bucknell University, Class of '56 Lectureship, Award for Inspirational Teaching, 1997.

Bucknell University Alumni Faculty Fellowship Award, 1992.

The Earth Technology Corporation Fellowship Award, 1988.

Engineering Foundation/American Society of Civil Engineers Research Initiation Grant, 1987.

Woodward-Clyde Consultants "Young Professional of the Year" award, 1983

Massachusetts Institute of Technology
Henry L. Pierce Engineering Laboratory



Department of Civil & Environmental Engineering, 77 Massachusetts Ave., Room 1-353, Cambridge, MA 02139-4307

John T. Germaine
Senior Research Associate

TEL (617) 253-7113
FAX (617) 253-6044
Email jgermaine@mit.edu

August 8, 2014

Recommendation for Chadi El Mohtar

It is with great pleasure that I write this letter of recommendation for the promotion of Chadi El Mohtar for tenure and advancement in rank to the position of Associate Professor at the University of Texas at Austin.

I am a Senior Research Associate in Civil and Environmental Engineering and a geotechnical engineer by education. My responsibilities are split 50/50 between research and teaching. I have over 30 years of experience here at MIT. I teach two undergraduate subjects per year (it has varied over the years), one graduate subject, supervise our undergraduate Honor Society, and advise both undergraduates and graduates. I have supervised 49 Master's students and 29 Doctorate students over the years. My graduate students have established successful careers in both academics (6 are now professors at universities around the world) and the profession. I have a relatively small research enterprise at MIT which focuses on understanding the mechanical behavior of clay rich materials ranging from soft sedimentary clays to unconsolidated mudrocks. I am also the Chairman of ASTM International's Committee D18 on Soil and Rock.

I do not know Chadi personally but have met him on several occasions at the biannual ASTM Committee week meetings. He is active in two of D18 subcommittees and is in the process of writing one technical standard. Chadi's work is outside my research area so I do not have any prior experience or preconceived notions about his research activities. In essence I am writing this review from a clean slate.

I begin this review with an overview of Chadi's research productivity. I believe productivity is best viewed in three components; graduate supervision, funding, and publications.

The foundation of research rests with graduate student supervision. Chadi has graduated 2 Doctorate students (I believe both now work in the profession) and has 2 more nearing graduation. He has graduated 8 Master's students and has served on 16 Doctorate plus another 14 Masters committees. His personal supervision load (about 5 per year in the steady state) is normal whereas the committee service is surprisingly high and covers a diverse range of topics. Given that he is in a large department, this must reflect his ability to contribute to the research activities outside his main emphasis. I consider this a major positive making him an asset to many in the department.

The ability to attract research funding from a variety of sources is essential to long term productivity. Clearly winning the National Science Foundation's Faculty Early Career Development (CAREER) Award is a major accomplishment. This highly competitive award is both recognition of his research potential and provides a considerable amount of stable research funding. This funding is further bolstered by grants from the private sector, the state of Texas, and NSF. Chadi's funding record most definitely indicates that he has the ability to maintain a substantial research endeavour as well as the ability to diversify to alternative sources.

The final component of research productivity is outside visibility of the work through publications and presentations. Chadi has 14 major publications (9 of which are published in the past 2 years), 15

Letter for El Mohtar

refereed conference papers, a significant number of secondary conference papers, and over 30 presentations. The presentations are both national and international providing good exposure. The key papers are essentially of two groupings; one set written with one of his Doctorate Graduates (Yoon) and the second written with colleagues from Purdue. I believe the second set is essentially the product of his Dissertation. Based purely on the numbers, Chadi is a bit behind on publications but the rate has picked in the last two years to a typical pace. The fact that most of his work is published in the last two years is expected to have a negative effect on his visibility or impact factor.

Chadi's research is primarily focused on two interrelated topics. The first topic is characterization of the mechanical behavior of clay slurries. The second topic is the alteration of the mechanical behavior due to modification of the material using NAPL or plastic fines. His work is important for ground modification to enhance earthquake resistance, grouting effectiveness, filtration efficiency, containment, and thixotropic setting of clays. His specific contributions are in experimental procedures and characterization of material behavior.

Clay slurries are extremely soft and weak materials which are anisotropic, rate dependent, and thixotropic. Their behavior is also sensitive to both temperature and pore fluid chemistry. Chadi has been exploring the rheology of bentonite clay slurries. The majority of this work has been published in a series of papers co-authored with Yoon. It is clear that he has undertaken a systematic approach to develop the building blocks for a comprehensive understanding of the behavior. He is investigating flow properties as they relate to infiltration into sands and strength as it relates to stiffening of the sand matrix.

In the paper "Disturbance effect on time dependent yield stress measurement of bentonite suspensions" he performed a detailed series of experiments to prove the vane apparatus provides the most reliable results of thixotropic strengthening. He also established the bias between the cone and plate technology as compared to the vane. The measurements are generalized with a model of time dependent strength gain that can be used as a predictive tool.

In the second paper of the series, "Dynamic rheological properties of sodium pyrophosphate modified bentonite suspensions for liquefaction mitigation" he investigates the stiffness of bentonite slurries as a function of time and strain level using cyclic vane loading apparatus. The research produced an outstanding set of experimental results which were used to quantify parameters of a model. The model provides a prediction of modulus with time based on an initial measurement. This provides a critical measure of the stiffening rate for slurries.

In the third paper of the series, "Groutability of granular soils using sodium pyrophosphate modified bentonite suspensions" he performed injection tests using bentonite based slurries. Important parameters were systematically varied including grout composition and matrix sand to quantify how well the grout penetrated into the sand. This work clearly builds on prior research. The investigation resulted in a new model for computation of the grouting number which is used as the criteria for field grout parameters. This model is much more comprehensive than the commonly used particle size criteria as it accounts for grout viscosity, in situ fines content, and packing density.

Chadi has also done experimental work to characterize behavior of unconventional material mixes. In the paper "Development of a laboratory procedure to evaluate the consolidation potential of soft contaminated sediments" he developed procedures and test equipment to measure the densification and change in NAPL concentration of kaolinite mixtures under very low stress conditions. The research is an example of careful attention to experimental detail. The results established the

Letter for El Mohtar

magnitude and rate of consolidation for oil and water wetted clay. It also found that the clay retains a finite amount of NAPL which should be considered in containment designs.

His most recent contribution "Pore pressure generation in sand with bentonite: from small strains to liquefaction" is an excellent paper integrating the results from static and dynamic tests to characterized the effect of small fractions of clay mixed with a clean sand. The research clearly establishes the beneficial effect of the plastic fines in the system as well as the increase in resistance due to ageing. This paper is a excellent example of careful experimentation and a systematic approach to investigation of complex material behavior.

It is clear that Chadi is a blossoming experimentalist. His work is detailed and systematic. It is well grounded in the established literature and he looks to micromechanics for the mechanisms driving his experimental observations. He appears to be on par with his peer group and working in an area with good potential for fundamental scientific achievement as well as practical engineering impact.

Based on my 30 years of experience at MIT, I see Chadi as an extremely bright, personally motivated individual. His publications are focused on important processes and his work shows a clear trend towards solving increasingly complex problems with rigorous experimental methods. Given his technical expertise, stature in the community, quality and quantity of his publications, I believe he has great promise to be a leader in the geotechnical community.

Sincerely,



John T. Germaine

Peoples, Hortensia D

From: John T Germaine <jgermain@MIT.EDU>
Sent: Wednesday, August 13, 2014 8:31 AM
To: Peoples, Hortensia D
Subject: RE: Reminder - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: ElMohtar_Austin.pdf

I am very sorry this took so long. Please extend my apologies to the committee. The letter is attached. Let me know if you need anything else.

Regards,
Jack

From: Peoples, Hortensia D [<mailto:hpeoples@mail.utexas.edu>]
Sent: Tuesday, August 12, 2014 1:54 PM
To: John T Germaine
Subject: Reminder - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Importance: High

Dr. Germaine,

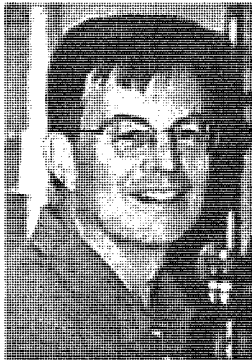
The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Sincerely,
Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin
corsi@mail.utexas.edu

Hortensia

Hortensia Peoples
Civil, Architectural and Environmental Engineering
Cockrell School of Engineering
The University of Texas at Austin
301 East Dean Keeton - Stop C1700
Austin, TX 78712-1056
Phone: (512) 232-1704 or (512) 471-4921



John Germaine

Senior Lecturer

Senior Research Associate

MIT

Room 1-353

77 Massachusetts Avenue

Cambridge, MA, 02139

Telephone: 617.253.7113 Email: jgermain@mit.edu Assistant: Sheila Fay / sfay@mit.edu

Education

B.S. 1976, Worcester Polytechnic Institute

S.M. 1980, MIT

Sc.D. 1982, MIT

Research Interests

Lab and field instrumentation

Geotechnical engineering

Data acquisition

Lab testing automation

Selected Publications

1. Germaine, J. T., and Germaine, A. V. (2009); *Geotechnical Laboratory Measurements for Engineers*, John Wiley & Sons, Inc., ISBN 978-0-470-15093-1.
2. Jamiolkowski, M., Ladd, C.C., Germaine, J.T. & Lanellotta, R. (1985) "New Developments in Field and Laboratory Testing of Soils: Theme Lecture No. 2," *Proc. 11th Intl. Conf. Soil Mechs. and Foundn. Engrg.*, San Francisco, Vol. 1, pp. 57-155.
3. Ladd, C.C., Weaver, J.S., Germaine, J.T. & Sauls, D.P. (1985) "Strength-deformation Properties of Arctic Silts," *Proc. ASCE Spec. Conf. on Civil Engineering in the Arctic Offshore*, San Francisco, pp. 8-20.

4. Germaine, J.T. & Ladd, C.C. (1990) "Triaxial Testing of Saturated Cohesive Soils," *ASTM Symposium on Advanced Triaxial Testing of Soil*, ASTM STP 977, pp. 421-459.
5. Sheahan, T.C., Germaine, J.T. & Ladd, C.C. (1990) "Automated Triaxial Testing of Soft Clay: Upgrading a Commercial System," *ASTM Geotechnical Testing Journal*, Vol. 13, pp. 153-163.
6. Onoue, A., Ting, N., Germaine, J.T. & Whitman, R.V. (1991) "Permeability of Disturbed Zone Around Vertical Drains," *Proc. ASCE Geotechnical Congress*, Boulder, June.
7. Zreik, D., Germaine J.T., & Ladd, C.C. (1995) "Undrained Strength of Ultra-Weak Cohesive Soils: Part I - Relationship Between Void Ratio and Effective Stress," (submitted to the *Canadian Geotechnical Journal*).
8. Zreik, D., Germaine J.T., & Ladd, C.C. (1995) "Undrained Strength of Ultra-Weak Cohesive Soils: Part II - Effect of Aging Time and Stress History," (submitted to the *Canadian Geotechnical Journal*).

UNIVERSITY OF WASHINGTON
COLLEGE of ENGINEERING *Civil & Environmental Engineering*

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12 July 2014

Richard L. Corsi, Ph.D., P.E., Chair
Department of Civil, Architectural and Environmental Engineering
University Of Texas at Austin
301 E. Dean Keeton Street, C 1700
Austin, Texas 78712-2100

Via email to hpeoples@mail.utexas.edu

Dear Professor Corsi:

In your letters of 2 and 11 June, you asked me to assess the scholarly contributions of Dr. Chadi El Mohtar who is being considered for promotion to associate professor with tenure. In order to prepare my assessment and to answer your four questions, I carefully reviewed Dr. El Mohtar's CV and I read the five papers you sent me. Based on this review, in my opinion he clearly deserves promotion.

Here are my responses to the four questions asked in your letter:

No. 1. I cannot say that I know Dr. El Mohtar well, although we have met a few times at ASCE Geo-Institute conferences. In addition, he recently gave a lecture about his research on grout materials to our geotechnical group here at the UW, and that gave me an opportunity to get to know him better. His lecture was well presented and he was able to very effectively answer several questions. After his talk and a social hour with my other geotechnical colleagues here, I drove him to his hotel and this gave me a chance to discuss his long-term research and academic goals. I'll comment further about this in my answer to your fourth question.

No. 2 Dr. El Mohtar is primarily an experimentalist, and from a reading of his papers, he is very good at it. Even when one has good research ideas, it is not easy to come up with an effective experimental design, interpret the data, and provide a reasonable explanation of the results that is useful for other researchers and practitioners. Based on these five papers, I can say that he does all this very well.

His dissertation research on liquefaction mitigation with bentonites was successful and resulted in an excellent journal paper, but I think he soon recognized that extending the concept to the field would be problematic. (I could discuss why laboratory success is often difficult to translate into successful field trials, as well as describe in some detail several previous attempts to use different additives to mitigate liquefaction in loose saturated sands.) It is to Dr. El Mohtar's credit that he has been able to extend the concepts and techniques developed in this research to grouting and the behavior of contaminated sediments. Grouting is an old technology that is very empirical and often proprietary, and I'm pleased to see Dr. El Mohtar's research is currently directed towards understanding the fundamental science behind grouting that has the potential to enable grouting to be designed on a more rational basis. This is important because grouting is applicable to many geotechnical and foundation problems besides liquefaction mitigation.

Professor Richard L. Corsi

12 July 2014

Page 2

It is impressive that Dr. El Mohtar has described the micro-clay mineralogical behavior of SPP-modified bentonite and how it affects its rheological properties. He also has proposed improved testing techniques for the basic rheological properties of gels and suspensions.

As to whether his publications have influenced others working in that field, it is difficult for me to say because I am not a professional grouter nor am I engaged in this area of research. I think, however, that it has great potential to do so, as I have described above.

No. 3. Evaluation of an individual's standing in relation to his peers is really impossible without access to the CVs of his cohort. However, I can say that Dr. El Mohtar progress thus far compares very favorably to the résumés of many assistant professors who were ready to be promoted to associate that I have reviewed during the past 35-40 years. Very few assistant professors have both a NSF CAREER award and an ASCE Geo-Institute Arthur Casagrande award, both of which are national and highly competitive.

No. 4. Long term growth and productivity of individuals is, as you know, always difficult to predict. Given what Dr. El Mohtar has accomplished so far, and based on discussions with him during his visit to the UW mentioned previously, I fully expect him to have a long and productive academic and professional career.

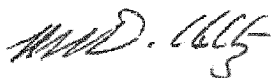
You asked for any additional comments, and I do have a two:

Dr. El Mohtar's student involvement is exceptional. It is very unusual for an assistant professor to have already completed two PhD students.

I pleased to see that Dr. El Mohtar has already taken and passed his EIT exam. I encourage him to obtain his PE license as soon as he is eligible.

I hope you find these comments useful in your deliberations. Please let me know if you need any additional information.

Sincerely yours,



Robert D. Holtz, Ph.D., P.E., D. G E., Dist. M. ASCE
Professor Emeritus

Enclosure (short CV)

Peoples, Hortensia D

From: Robert D. Holtz <holtz@u.washington.edu>
Sent: Monday, July 14, 2014 9:51 PM
To: Peoples, Hortensia D
Subject: Re: Revised On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: Chadi El Mohtar Assoc July14.docx; ShortBio June14.doc

Pls see attached for my letter for Chadi and short CV. Cheers! Bob Holtz

=====

R. D. Holtz, PhD PE DGE Dist.M.ASCE Tel: 206-525-8433
Professor Emeritus holtz@uw.edu
University of Washington
Seattle, USA

=====

On Wed, 11 Jun 2014, Peoples, Hortensia D wrote:

> Hello again,
> Unfortunately we inadvertently did not include some relevant information for your assessment in the
previous CV. Please use this version for your assessment of Dr. El Mohtar. Thank you for your time in
advance.
> Hortensia
> *****
> Dr. Holtz,
>
> The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is
considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would
appreciate if you would provide your candid assessment of his scholarly contributions. I have attached
electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to
receive any other information, or a hard copy of the documents, please let me know.
>
> We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.
>
> Sincerely,
> Richard L. Corsi, Ph.D., P.E.
> Chair and ECH Bantel Professor for Professional Practice Department of
> Civil, Architectural and Environmental Engineering The University of
> Texas at Austin corsi@mail.utexas.edu<<mailto:corsi@mail.utexas.edu>>
>
>
> Hortensia
> *****
> Hortensia Peoples
> Civil, Architectural and Environmental Engineering Cockrell School of
> Engineering The University of Texas at Austin
> 301 East Dean Keeton - Stop C1700

ROBERT DEAN HOLTZ II, Ph.D., P.E., D. GE., Dist. M. ASCE

Department of Civil Engineering 4108 42nd Ave. NE
University of Washington Seattle, WA 98105
132G More Hall, Box 352700
Seattle, WA 98195-2700
PHONES: 206-543-7614 206-525-8433
FACSIMILE: 206-543-1543
E-MAIL: holtz@u.washington.edu
BIRTH DATE: December 1, 1938 in Tucson, Arizona

EDUCATION:

Northwestern University, Sept 1966-June 1970, Doctor of Philosophy (Soil Mechanics)
Harvard University, Feb 1966-June 1966, Special Program Soil Mechanics
University of Minnesota, Mar 1960-June 1962, Master of Science in Civil Engineering
University of Minnesota, Sept. 1955-Mar. 1960, Bachelor of Science(Civil Engineering)

ACADEMIC AND PROFESSIONAL EXPERIENCE:

University of Washington, Department of Civil & Environmental Engineering, Seattle, WA
Professor of Civil Engineering, 1988-2008; Professor Emeritus, 2008-
Director, Structures and Geotechnical Engineering and Mechanics Program, 1990-94
Purdue University, School of Civil Engineering, West Lafayette, IN
Professor of Geotechnical Engineering, 1985-88; Associate Professor, 1977-85; Assistant Professor,
1973-77
Studio Geotecnico Italiano, Milan, Italy. Research and Consulting Geotechnical Engineer, Sept 1984-Aug
1985; Summer 1986.
École Nationale des Ponts et Chaussées, Paris, France. Visiting Professor, Summer 1984 (half time).
Terrasol, Puteaux, France. Consulting Geotechnical Engineer, 1984 (half time).
National Research Council of Canada, Division of Building Research, Ottawa, Ontario. Visiting Scientist,
Summer 1976.
Royal Institute of Technology (KTH), Stockholm, Sweden. Research Engineer, Summer 1975.
Swedish Geotechnical Institute, Stockholm, Sweden. Research Engineer, Oct 1970 - Aug. 1973; Summer
1974.
Soil Testing Services, Inc., Northbrook, Illinois. Civil Engineer, Jun 1970-Oct 1970.
Northwestern University, Evanston, Illinois. Teaching Assistant in Civil Engineering and Graduate
Research Engineer, Jun 1967-Sept 1968 (half time).
California State University, Sacramento, California. Assistant Professor of Civil Engineering, Sept 1964 -
Jan 1966.
State of California, Dept. of Water Resources, Oroville Dam; Bryte Soils Laboratory, Assistant Civil
Engineer, Jul 1962-Sept 1964; Summer 1965.
University of Minnesota, Minneapolis. Teaching Assistant in Civil Engineering, academic years 1960-61
and 1961-62 (half-time).
City of Milwaukee, Wisconsin, Civil Engineer, Summer 1961.
State of Minnesota, Dept. of Highways, Civil Engineer, Summer 1960.

HONORS AND AWARDS:

Walter P. Murphy Scholarship, Northwestern University, 1966-67; 1968; 1969-70
Royal E. Cabell Fellowship, Northwestern University, 1968-69
Chi Epsilon, Member, 1959-
Sigma Xi, Member, Associate Member, 1969-1976; Member, 1977-Current 2

Order of the Engineer, 1980

Stage a Haut Niveau Scholarship from Ministry of Foreign Affairs, Government of France, for "Research in Soil Mechanics," Summer 1984

M. S. Kersten Lecturer, 1989, Minnesota Geotechnical Conference, St. Paul

Distinguished Lecturer, 1989, Department of Civil Engineering, Cullen College of Engineering, University of Houston, Texas

Distinguished Lecturer, 1996, Kentucky Geotechnical Engineering Group, Louisville

Cross-Canada Lecturer, 1999, Canadian Geotechnical Society

38th Ardaman Lecture, Feb 1999, University of Florida

Excellent Contributions Award (USA), International Association for Computer Methods and Advances in Geomechanics, 2001

9th Spencer J. Buchanan Lecture, Texas A & M University, 2001.

J. S. Braun/Braun Intertec Visiting Professor, Department of Civil Engineering, University of Minnesota, Minneapolis, 2002

R.M. Quigley Award for Best Paper in the Canadian Geotechnical Journal, Honorable Mention (with D.T. Bergado, A.S. Balasubramaniam, and R.J. Fannin) 2003

8th R. L. Schiffman „44 Lecturer, Cornell University, 2003.

Sir Casimir Gzowski Medal, 2003 (Honorable Mention, with T. M. Allen, R. J. Bathurst, D. Walters, and W. F. Lee). (The medal is awarded annually for the best technical paper on a civil engineering subject in the areas of surveying, structural engineering and heavy construction. This is the highest medal of the Canadian Society of Civil Engineering for a Technical Paper, and there is one winner and one honorable mention each year.)

3rd G. A. Leonards Lecture, Purdue University, May 16, 2005

IGS Pioneer, International Geosynthetics Society, Sept 19, 2006

Robert D. Holtz Honorary Symposium, ASCE Geotechnical Group, Apr 20-21, 2007.

2007 Stanley D. Wilson Memorial Lecture, University of Washington, Seattle, Washington, Nov 15, 2007

Distinguished Member, American Society of Civil Engineers, 2007

2008 H. R. Berg Lecture, Department of Civil and Environmental Engineering, University of Washington, Feb 6, 2008

Puget Sound Academic Engineer of the Year, 2008

Robert D. Holtz Symposium, Special Session at the First Pan-American Geosynthetics Conference and Exhibition, *GeoAmericas 2008*, Cancun, Mexico, Mar 3, 2008

Distinguished Service Award, Seattle ASCE Geotechnical Group, Apr, 2008

2008 Lymon C. Reese Lecture, University of Texas at Austin, May 8, 2008

2008 Osterberg Geomechanics Lecture, Northwestern University, May 29, 2009.

46th Karl Terzaghi Lecturer, Geo-Institute of the American Society of Civil Engineers, GeoFlorida Conference, West Palm Beach, Florida, Feb 23, 2010. (Also presented in Seattle; Guarujá, Brazil; Shanghai, China; Atlanta, Ga.; Kingston, Ont.; Lawrence, Kan.)

RESEARCH:

Professor Holtz has been Principal or Co-Principal Investigator, Consultant or Advisor to research projects sponsored by National Swedish Road Board; AB Fodervävnader (2); Swedish Contractors Assn.; Swedish Power Board; National Science Foundation (10); Purdue Research Foundation (3); Indiana Dept. of Highways (4); Federal Highway Administration (8); U.S. Air Force Engineering and Services Center; Fukada Geological Institute (Japan) (2); U.S. Air Force Office of Scientific Research (3); Colorado Dept. of Highways; Transportation Research Board; International Construction Equipment, Inc.; Hoechst-Celanese Corp. (2); ITW Enterprises; Geosafe Corp.; Westinghouse ESD and Dept. of Energy; Washington State Dept. of Transportation (8); SMW Seiko Corp.; Polyfelt, Inc. (5); Nicolon Corp.; Exxon Chemical Corp.; NAGS Award of Excellence; Egyptian Cultural & Education Bureau; ARI Corp. and Washington Technology Center, Association of Drilled Shaft Contractors (2), Hilfiker Corp. (2); Giken Seikakusho Ltd. (Japan).



UNIVERSITY OF MICHIGAN

ROMAN D. HRYCIW, Ph.D.
DEPT. OF CIVIL AND ENVIRONMENTAL ENGINEERING
2366 G.G. BROWN BUILDING
ANN ARBOR, MICHIGAN 48109-2125
ph. (734) 763-5491
romanh@umich.edu

July 22, 2014

Dr. Richard L. Corsi, Chair
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin
301 E. Dean Keeton Street, C 1700
Austin, Texas 78712-1200

Dear Professor Corsi,

I am writing pursuant to your request for my assessment of Professor Chadi Said El Mohtar's scholarly contributions in conjunction with his evaluation for tenure and promotion to rank of Associate Professor at the University of Texas at Austin. I have known of Professor El Mohtar's work from about 2009 when I read his paper on geomembrane interface friction and later referred to his work on grouting of soils and specifically the problem of permeation of coarse-grained soils. I had a personal interest and conducted research in both of these areas earlier in my career. Although my interests are not as deep as Professor El Mohtar's, I do try to stay abreast of new research findings in these areas. I did not personally know Professor El Mohtar until I met him during a visit to the University of Texas earlier this year.

To answer the second question posed in your letter, Professor El Mohtar has provided our profession with excellent experimental data and analytical explanations for the permeation of soils with bentonite suspensions. I would consider him a leading expert in this area today. As a PhD student at Purdue, he conducted exhaustive experiments on the mechanical behavior of sand-bentonite mixtures with particular emphasis on the generation of excess pore water pressures in such mixtures when subjected to cyclic-dynamic loading. His explanations were clear and logical. His 2014 paper co-authored by Bobet, Drnevich, Johnston and Santagata is a landmark work and the starting point for all others who may choose to work in this area of soil improvement. I recognize the difficulties that Professor El Mohtar must have faced in collaborating with four very prominent and busy co-authors. As such, I would not hold the delayed submission and publication of this work against Professor El Mohtar. Indeed the relatively late publication of his PhD-based work did not stop him from developing an independent research program at Texas which addresses the ability of bentonite suspensions when mixed with small mass percentages of sodium pyrophosphate to permeate loose sands more easily. This work with his own PhD student J. Yoon showed how to predict soil groutability and more importantly, to enhance the permeation. You asked "Have Dr. El Mohtar's publications influenced the thinking of, or the methods used by others in your field?" I will respond that it may still be too early for that to have happened given the recent journal publications of the work. However, I have no doubt that they will! I do note that related papers were published extensively in ASCE Geotechnical Special Publications (GSPs) dating back to 2008. I am familiar with several of the GSP papers and find them to be of ASCE journal quality.

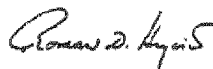
I will add one more comment on the topic of acceptance: the grouting industry has become lethargic in its response to research developments since the passing of grouting pioneers such as Wallace Hayward Baker and the near-retirement of Professor Raymond Krizek (Northwestern University). The ASCE technical committee on grouting is almost entirely staffed by practitioners and is desperately in need of new blood and collaboration with young researchers such as Professor El Mohtar. When I met with him earlier this year, I encouraged him to join forces with Professor Kumaraswamy Vipulandandan (Vipu) from the University of Houston to shake up and invigorate this committee. I believe that this is the correct route to very wide acceptance of his work by the profession. It will happen.

You next asked: "How would I assess Dr. El Mohtar's development compared with others in his cohort at research-intensive universities". Dr. Mohtar is on par with his cohorts at top universities, particularly with his colleagues who are experimentalists. Dr. Mohtar's experiments are time-consuming, complex and require specialized equipment. NSF-CAREER awards in geotechnical engineering and geomechanics are difficult to come by and to be a viable candidate one must have already demonstrated significant accomplishment; not just promise. I would go so far as to say that a CAREER award in "geotech" or geomechanics is almost never obtained on the first or even second attempt. A 2012 CAREER award at Prof. El Mohtar's 4-year mark is a major accomplishment and it took less time than usual.

Your final question "What is your perspective on Dr. El Mohtar's promise for future professional growth and leadership" is easy to answer. I believe that he has already demonstrated professional growth and leadership. His leadership will increase further as he becomes more active on journal editorial boards and in his professional society. I note that he has organized and co-chaired sessions at conferences, is a member of several committees, chairs an ASTM task group on cyclic simple shear testing and regularly reviews journal and conference papers. With his solid record of publication in the ASTM Geotechnical Testing Journal he should now become an editorial board member of this journal and with his extensive record of publications in ASCE GSP's he should become a leading force in the ASCE Geo-Institute's grouting committee.

Although I was not asked to do so, I will conclude my assessment with a strong endorsement of tenure and promotion for Dr. Chadi El Mohtar to rank of Associate Professor at the University of Texas.

Sincerely,



Roman D. Hryciw
Professor of Civil Engineering

Peoples, Hortensia D

From: Roman Hryciw <romanh@umich.edu>
Sent: Tuesday, July 22, 2014 1:44 PM
To: Peoples, Hortensia D
Cc: Corsi, Richard L
Subject: Re: Revised - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: Hryciw letter for El Mohtar T&P casebook.pdf; R D Hryciw short CV 072214.pdf

Dear Ms. Peoples,

Attached please find my assessment of Professor Chadi Said El Mohtar's scholarly contributions for his tenure and promotion case.

Also attached is my short CV.

My thanks for your patience and apology for the delay.

Sincerely,
Roman D. Hryciw

On Wed, Jun 11, 2014 at 6:33 PM, Peoples, Hortensia D <hpeoples@mail.utexas.edu> wrote:

Hello again,

Unfortunately we inadvertently did not include some relevant information for your assessment in the previous CV. Please use this version for your assessment of Dr. El Mohtar. Thank you for your time in advance.

Hortensia

Dr. Hryciw,

The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Sincerely,



ROMAN D. HRYCIW

Department of Civil Engineering
University of Michigan
2366 GG Brown Building
Ann Arbor, Michigan 48109-2125

(734) 763-5491 (work)
(734) 662-9414 (home)
(734) 764-4292 (FAX)
romanh@umich.edu

EDUCATION

Ph.D. Civil Engineering, Northwestern University (1986)
M.S. Civil Engineering, Northwestern University (1984)
B.S. Civil Engineering, Drexel University (1981)

PROFESSIONAL POSITIONS

2011- University of Michigan, Professor of Civil Engineering
2008-2011 University of Michigan, Associate Chair, CEE Department
2007 (12 mos.) University of Michigan, Interim Chair, CEE Department
1998-2006 University of Michigan, Professor of Civil Engineering
1992-1998 University of Michigan, Associate Professor of Civil Engineering
1993 (6 mos.) Kyiv University of Civil Engineering, Visiting Professor
1986-1992 University of Michigan, Assistant Professor of Civil Engineering
1981-1985 Northwestern Univ., Research & Teaching Assistant
1980-1981 Woodward-Clyde Consultants, Plymouth Meeting, PA, Lab Tech.
1978-1979 U.S. Army Engineer District, Philadelphia, PA, Field Inspector
1977-1978 Roy F. Weston Consult., West-Chester, PA, Environmental Tech.

HONORS AND AWARDS LAST 10 YEARS

J.S. Braun/Braun Intertec Professorship, Univ. of Minnesota, 2012
Chi Epsilon Honorary Member, Univ of Michigan Chapter, 2009
Shevchenko Scientific Society, Membership, 2008
Wesley O. Pipes Distinguished Alumni Lectureship, Drexel University, 2006
ASCE GeoCongress Best Paper Award, 2006
John F. Ullrich Education Excellence Award, 2004
James M. Robbins Excellence in Teaching Award (Chi Epsilon), 2004

RESEARCH INTERESTS

Site Characterization, In-situ Testing, Engrg Geology, Soil Dynamics & Earthquake Engrg,
Soil Improvement and Stabilization, Experimental Micromechanics, Image Processing,
Computer Vision, Soil Testing System Design.

COURSES TAUGHT

Foundation Engineering, Engrng. Properties of Soils, Geotechnical Engineering, Excavation and
Tunneling, Engrng. Geology & Site Characterization, Rock Mechanics, Stability of Earth Masses,
Theoretical Soil Mechanics, Introduction to Civil and Environmental Engineering.

CURRENT NATIONAL, STATE AND LOCAL PROFESSIONAL SERVICE

ASCE Geo-Institute, Technical Coordinating Council (2007-2012), Chair (2012-present)
ASCE Geo-Institute Technical Publications Committee (2001-present)
ASCE Geo-Institute Representative to the American Geological Institute (2000-present)
Shevchenko Scientific Society, Detroit Branch, Vice-President (2011- present)
ASCE Geo-Institute Committee on Underground Construction and Engineering (2012-present)
ASCE Geo-Institute Computational Geotechnics Committee (2009-present)
ASCE Geo-Institute Committee on Engineering Geology, Chair (1997-2001); Member (1987-present)
TRB Committee AFP20 Exploration and Classification of Earth Materials (2009-present)

R.D.Hryciw

CURRENT RESEARCH

"Optical Characterization of Intrinsic Properties and Fabric of Coarse-Grained Soils"

National Science Foundation 2013-2016 (PI) \$398,194

"Laboratory, Field and In-Situ Soil Characterization through Image Processing"

National Science Foundation 2009-2014 (PI) \$391,000

DOCTORAL STUDENTS

Zheng, Junxing (expect 2016)	Susila, Endra (2005)	Raschke, Scott A. (1996)
Ohm, Hyon-Sohk (2013)	Shin, Seung-Cheol (2005)	Ghiassian, Hossein (1995)
Saftner, David (2011)	Shoop, Sally (2001)	Irsyam, Masyhur (1991)
Jung, Yongsub (2010)	Ghalib, Ali (2001)	Vitton, Stanley J. (1991)
Jirathanathaworn, T. (2009)	Horner, David A. (1997)	Thomann, Thomas G. (1990)

RECENT PUBLICATIONS

Zheng, J., Hryciw, R.D. and Ohm, H.-S. (2014) "Three-Dimensional Translucent Segregation Table (3D-TST) Test for Soil Particle Size and Shape Distribution" submitted to the Proc. of the International Symposium *Geomechanics from Micro to Macro*, Cambridge, UK, September 1-3.

Zheng, J. and Hryciw, R.D. (2014) "Optical Flow Analysis of Internal Erosion and Piping in Soil Images Captured by the VisCPT", Proc. of GeoShanghai, 2014.

Hryciw, R.D., Zheng, J., Ohm, H.-S. and Li, J. (2014) "Innovations in Optical Geo-Characterization", Invited Keynote Lecture, Proc. of the 2014 ASCE GeoCongress, Geo-Characterization and Modeling for Sustainability, GSP No. 235, 97-116.

Hubler, J., Ohm, H.-S., Athanasopoulos-Zekkos, A. and Hryciw, R.D. (2014) "Effect of Particle Morphology on the Monotonic and Cyclic Response of Gravel-sized Soils through Large Scale Simple Shear Testing", Proc. of the 2014 ASCE GeoCongress, Geo-Characterization and Modeling for Sustainability, GSP No. 234, 683-692.

Saftner, D.A., Hryciw, R.D. and Green, R.A. (2014) "Comparison of Factors Influencing Time-Dependent Strength Gain in Recently Disturbed Sand Deposits", Proc. of the 2014 ASCE GeoCongress, Geo-Characterization and Modeling for Sustainability, GSP No. 234, 93-102.

Zheng, J. and Hryciw, R.D. (2014) "Gravel Particle Size Characterization by Stereophotography", Proc. 2014 ASCE GeoCongress, Geo-Characterization and Modeling for Sustainability, GSP No. 234, 64-73.

Ohm, H.-S. and Hryciw, R.D. (2014) "Soil Fabric Characterization by Wavelet Transformation of Images", Proc. of the 2014 ASCE GeoCongress, Geo-Characterization and Modeling for Sustainability, GSP No. 234, 723-730.

Hryciw, R. D. and Ohm, Hyon-Sohk (2014) "Size Distribution of Coarse-Grained Soil by Sedimaging", ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 140, No. 4, 04013053, DOI: 10.1061/(ASCE)GT.1943-5606.0001075.

Hryciw, R.D., Ohm, H.-S., Jung, Y. and Zhou, Jie (2014) "The Theoretical Basis for Optical Granulometry by Wavelet Transformation", ASCE Journal of Computing in Civil Engineering, DOI:10.1061/(ASCE)CP.1943-5487.0000345, published on-line July, 2013

Ohm, H.S., Sahadewa, A., Hryciw, R.D., Zekkos, D. and Brant, N. (2013) "Sustainable Soil Particle Size Characterization through Image Processing", Geotechnical and Geological Engineering, Vol. 31, No. 6, pp. 1647-1652 DOI:10.1007/s10706-013-9657-z.

Ohm, H.-S. and Hryciw, R.D. (2013) "The Translucent Segregation Table Test for Sand and Gravel Particle Size Distribution", ASTM Geotechnical Testing Journal, Vol. 36, No. 4, 592-605. DOI:10.1520/GTJ20120221. ISSN 0149-6115.

Ohm, H.-S. and Hryciw, R.D. (2013) "Broad Range Soil Particle Analysis through Advances in Imaging Technology", Proc. of the 18th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE), Paris, France, Vol. 5, 3491-3494.



POLITECNICO DI TORINO

Michela Jamiolkowski, Professore Emerito di Geotecnica

Subject Dr. Chadi El Mohtar Scholarly Contribution

I understand that the Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. I am happy to contribute with my assessment.

I have known Dr. El Mohtar during my frequent visits at Purdue University when he was working on his Ph. Dissertation under the guidance of Professors Bobet and Santagata.

Ever since I have had other opportunities to meet him personally during my visits at the Texas University at Austin where I have been made acquainted by Chadi of his current research activities and their relevance for the engineering practice.

Over the years, I have deepened my personal acquaintance of Dr. El Mohtar, of his research activities and his achievements and I can certainly give evidence that he is a highly talented individual with excellent scientific background and with a significant aptitude to deal with complex problems relating to different areas of engineering. As can be inferred from the list of his publications, including 16 refereed journal publications, the main stream of his research activities focuses on soil improvement covering areas of relevant engineering interests such as earthquake induced and static liquefaction of sands and silty sands, as well as different issues pertinent to the Environmental Geotechnics.

In these activities, El Mohtar has confirmed his noteworthy capability to deal with problems involving a deep knowledge of engineering mechanics, soil mechanics, geology and chemistry along with a great skill in planning and conducting experimental researches.

The spectrum of Dr. El Mohtar research achievements is characterized by an innovative and multidisciplinary imprint, a crucial feature in the present trend of Geotechnical and Geoenvironmental Engineering.

Based on the above and on my personal knowledge of Dr. El Mohtar, I consider him a talented scientist with excellent perspectives for further growth, therefore fully deserving to be promoted to the rank of Associate Professor.

Torino, July 2014

Michela Jamiolkowski

Professor Emeritus of Geotechnical Engineering, Technical University, Torino, Italy

*Foreign Associate of the U.S. Academy of Engineering;
Recipient of ASCE K. Terzaghi and R.B. Peck Award
Past President of the International Society of Soil Mechanics and Geotechnical Engineering;
Founder and President of the Engineering Company "Studio Geotecnico Italiano"*

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Corso Duca degli Abruzzi, 24 - 10129 Torino Italia
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e-mail: michela.jamiolkowski@polito.it url: www.polito.it/ricerca/dipartimento/distr/

Dipartimento di Ingegneria Strutturale e Geotecnica

Peoples, Hortensia D

From: Michele Jamiolkowski <m.jamiolkowski@studiogeotecnico.it> on behalf of Prof. Michele Jamiolkowski <michele.jamiolkowski@polito.it>
Sent: Wednesday, July 23, 2014 7:21 AM
To: Peoples, Hortensia D; corsi@mail.utexas.edu
Subject: Reminder - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: M JAMIOLKOWSKI CV (3).docx; 20140723135314530_0001.pdf

Apologizing for my delay, enclosed please find my letter of support for Dr. Chadi El Mohtar and my short resumé
Best regards
Prof. M. Jamiolkowski

Michele Jamiolkowski, Professor Emeritus
Technical University of Torino
Corso Duca degli Abruzzi 24
10129 Torino Italy
Office: +39 011 5644840
Mobile: +39 335292350
fax +39 011 5644899
e-mail: michele.jamiolkowski@polito.it

Da: Peoples, Hortensia D [<mailto:hpeoples@mail.utexas.edu>]
Inviato: venerdì 18 luglio 2014 04:38
A: m.jamiolkowski@studiogeotecnico.it
Oggetto: Reminder - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Priorità: Alta

Dr. Jamiolkowski,

The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Sincerely,
Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin
corsi@mail.utexas.edu

Hortensia

Michele (Mike) Jamiolkowski

Professor of Geotechnical Engineering, Technical University of Torino, Torino, Italy
Chairman of the Engineering Company Studio Geotecnico Italiano

Education

M.S. in Soil Mechanics and Engineering Geology, Warsaw Technical University, 1959.

Postgraduate studies

Technical University of Torino (Italy); University of Kaiv (URSS) University of Laval, Quebec (Canada); MIT, Cambridge (USA)

Experience

Educational Institutions: Professor of Geotechnical Engineering at the Technical University of Torino in period 1969-2006 In year 1979, one of the promoter of the first Ph.D .programme in Geotechnical Engineering in Italy. At present, Emeritus Professor of Civil Engineering, Technical University of Torino.

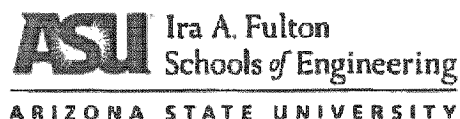
Industrial Chairman of the Engineering Consulting Company, Studio Geotecnico Italiano, 1964-present

Selected scientific and professional recognitions

- President of the International Society for Soil Mechanics and Foundation Engineering; Term 1994-1997
- Chairman of the International Committee for the Safeguard if the Leaning Tower of Pisa; 1990-2001
- President of the International Board of Experts for the Development of the second world largest Zelazny Most Copper Mine Tailings Pond, KGHM Lublin, Poland; 1992-present • Corresponding member of the Lagrangian Society of Science;
- Foreign Associate of US National Academy of Engineering
- Corresponding member of the Polish Academy of Science; Editor in Chief of the International Journal Geomechanics and Geoengineering
- Associate Internal Editor of the Soils and Rock International Journal
- Member of the International Advisory Group of the European Bank for the Reconstruction and Development for the New Shelter of the Chernobyl Nuclear Plant, Ukraine; 1998-present.

Honors, Awards

Recipient of the De Beer Prize assigned by the Belgian Geotechnical Society; 1994-1998
Honorary Professor Academia Sinica of Guangzhou, China
Doctor of Science (Honoris Causa) in Civil Engineering, Technical University of Bucharest, Romania
Doctor in Civil Engineering (Honoris Causa) Ghent University, Belgium
Honorable International Member of the Japanese Geotechnical Society; 1998-present
2001 Recipient of the ASCE "Karl Terzaghi Award" 2001 Recipient of the Italian Prize "Savior of the



12 July 2014

Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
University of Texas
Austin, Texas

Subject: Assessment of the scholarly credentials of Dr. Chadi El Mohtar for promotion to Associate Professor with Tenure

Dear Professor Corsi,

At your request, I am providing this assessment of the scholarly credentials of Dr. Chadi El Mohtar for promotion to Associate Professor with tenure at the University of Texas at Austin. I have known Dr. El Mohtar for about four years. My association with him has been primarily through interaction at professional meetings, including attendance at sessions where he had made presentations, attendance at sessions he has chaired, and informal discussions at these meetings.

I believe Dr. El Mohtar is one of the more promising young investigators in geotechnical engineering at the present time. He has an impressive record of scholarly productivity as evidenced by the papers he has authored or co-authored in high quality scholarly journals and the awards and honors he has received. His work on the rheological properties of bentonite suspensions is particularly noteworthy and has important implications with regard to the groutability of soils and possibly mitigation of earthquake-induced soil liquefaction. This work has garnered Dr. El Mohtar wide recognition among his peers and, in my opinion, has established him as one of the leading investigators in the next generation of geotechnical researchers. I note that Dr. El Mohtar has been recognized by ASCE for his contributions in this area with the Arthur Casagrande Professional Development Award. He has also made noteworthy contributions in the area of laboratory testing of granular soils with a large fines content.

With respect to other aspects of Dr. El Mohtar's scholarly productivity, I note that his record of mentoring is good, with two PhD students and seven M.S. thesis students having graduated under his supervision and two additional PhD students and one additional MS student in progress. If there is one area of some concern with respect to Dr. El Mohtar's qualifications for promotion with tenure, it would be with respect to his ability to procure sponsored research. While he has received a prestigious NSF CAREER award, this appears to be the only substantial sponsored project (i.e. project in excess of \$100,000) on which he is the lead investigator. However, as noted above, his scholarly productivity has been

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Civil, Environmental and Sustainable Engineering
Del E. Webb School of Construction
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(480) 965-3589 FAX (480) 965-0557



Richard L. Corsi, Ph.D., P.E.
12 July 2014
Page 2 of 2

excellent and this, to my mind, is the primary measure by which candidates for promotion should be judged.

I note that in addition to his scholarly accomplishments, Dr. El Mohtar has been active in professional service activities. These activities include serving on ASCE Geo-Institute and ASTM committees and organizing and chairing sessions at conferences.

In summary, I believe Dr. Chadi El Mohtar has established himself as one of the leading young investigators among his colleagues at US Universities. He has an excellent record of scholarly publications that have made significant contributions to the field. I have no reason to believe he will not continue to continue to grow professionally, assume a leadership position in the geotechnical field, and make additional contributions to the field.

Sincerely,

A handwritten signature in black ink, reading 'Edward Kavazanjian, Jr.'.

Edward Kavazanjian, Jr., Ph.D., P.E., F.ASCE, NAE, D.GE
Ira A. Fulton Professor of Geotechnical Engineering

School of Sustainable Engineering and the Built Environment
Civil, Environmental and Sustainable Engineering
Del E. Webb School of Construction
PO Box 875306 Tempe, AZ 85287-5306
(480) 965-3589 FAX (480) 965-0557

Peoples, Hortensia D

From: Edward Kavazanjian <Edward.Kavazanjian@asu.edu>
Sent: Saturday, July 12, 2014 4:43 PM
To: Peoples, Hortensia D
Subject: RE: Revised - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: Chadi el Mohtar letter.pdf

Please find attached my assessment of the scholarly qualifications of Dr. Chadi El Mohtar.

Sincerely,

Edward Kavazanjian, Jr., Ph.D., P.E., NAE
Ira A. Fulton Professor of Geotechnical Engineering
School of Sustainable Engineering and the Built Environment
Arizona State University
PO Box 873005
Tempe, AZ 85287-3005

From: Peoples, Hortensia D [<mailto:hpeoples@mail.utexas.edu>]
Sent: Wednesday, June 11, 2014 3:36 PM
To: Edward Kavazanjian
Subject: Revised - On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Importance: High

Hello again,

Unfortunately we inadvertently did not include some relevant information for your assessment in the previous CV. Please use this version for your assessment of Dr. El Mohtar. Thank you for your time in advance.

Hortensia

Dr. Kavazanjian,

The Department of Civil, Architectural and Environmental Engineering at the University of Texas at Austin is considering Dr. Chadi El Mohtar for promotion to Associate Professor. As part of this process, we would appreciate if you would provide your candid assessment of his scholarly contributions. I have attached electronic copies of our formal letter, Dr. El Mohtar's current CV, and five of his papers. If you would like to receive any other information, or a hard copy of the documents, please let me know.

We would appreciate receiving your letter by July 15, 2014. Thank you in advance for your assessment.

Sincerely,

Richard L. Corsi, Ph.D., P.E.
Chair and ECH Bantel Professor for Professional Practice
Department of Civil, Architectural and Environmental Engineering
The University of Texas at Austin
corsi@mail.utexas.edu

CURRICULM VITAE

EDWARD KAVAZANJIAN, JR.

Associate Professor of Civil Engineering
Ira A. Fulton School of Engineering
Arizona State University
Tempe, AZ 85287-5306
Tel: +1 (480) 727-8566
Fax: +1 (480) 965-0557
Email:
edkavy@asu.edu

EDUCATION

University of California, Berkeley
Ph.D., Geotechnical Engineering, 1978
Massachusetts Institute of Technology: SM, Geotechnical Engineering, 1975
Massachusetts Institute of Technology: SB, Civil Engineering, 1973

PROFESSIONAL HISTORY

Department of Civil and Environmental Engineering, Arizona State University
Associate Professor, 2004 - present
Department of Civil Engineering, University of Southern California Professor
(Research), 2003 – 2004
Consulting Engineer, Huntington Beach, California
Independent Consultant, 2002 - 2004
Department of Civil Engineering, Monash University, Melbourne, Australia
Visiting Lecturer, July – September 2002
GeoSyntec Consultants, Huntington Beach, California
Principal, 1995-2002; Associate, 1992-1995
MAA Engineering Consultants, Inc., Los Angeles, California
Executive Vice President, 1990-1992
The Earth Technology Corporation, Long Beach, California
Associate, 1988-1990
Parsons, Brinckerhoff Quade and Douglas, Inc., New York, New York.
Lead Geotechnical Engineer, 1985-1987
Supervising Geotechnical Engineer, 1987-1988
Department of Civil Engineering, Stanford University, Stanford, California Assistant Professor,
1978-1985

RESEARCH INTERESTS

Earthquake Engineering, Geoenvironmental Engineering, Geotechnical Engineering

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)

North American Geosynthetics Society (NAGS)

International Geosynthetics Society (IGS)

Solid Waste Association of North America (SWANA)

United States Society on Dams (USSD)

Earthquake Engineering Research Institute (EERI)



Cornell University
College of
Engineering

Thomas O'Rourke
Thomas R. Briggs Professor of Engineering
273 Hollister Hall
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July 6, 2014

Professor Richard L. Corsi
Cockrell School of Engineering
The University of Texas at Austin
Department of Civil, Architectural and Environmental Engineering
EJC 4.200
301 E. Dean Keeton St.
Austin, Texas 78712-2100

Re: Reference for Dr. Chadi El Mohtar

Dear Professor Corsi:

Thank you for your letter requesting my assessment of Dr. El Mohtar's scholarly contributions to assist in your decision making for his advancement to tenure and the rank of Associate Professor at the University of Texas at Austin. I am pleased to respond to your request. I know Dr. El Mohtar as a colleague. I had the opportunity to visit with him in 2013 and tour his labs when I was at University of Texas at Austin to give a seminar.

Dr. El Mohtar is a solid academic researcher and scholar. He is bright, creative, and articulate. He is developing an excellent reputation in geotechnical engineering, specializing in the effects of pore fluid and suspension effects on the mechanical and hydraulic characteristics of geomaterials.

Dr. El Mohtar has established impressive laboratory facilities in the Department of Civil, Architectural and Environmental Engineering, with which he has conducted state-of-the art experiments on pore fluid-soil micro-mechanics, pore fluid rheology, and non-aqueous phase fluid migration in porous media. His work has substantial practical value for geotechnical, geoenvironmental, and petroleum engineering.

There were copies of five published papers by Dr. El Mohtar and his co-workers in the review package sent to me. I found the papers to be of high quality, technically sound, and well-written. I am especially impressed by the paper by El Mohtar, et al (2014) *Geotechnique* 64, No. 2 "Pore pressure generation in sand with bentonite: from small strains to liquefaction" in which the results of careful and meticulously conducted laboratory experiments are used to show how highly plastic clay (bentonite) content significantly affects the generation of excess pore pressure in sand at large and small strains under both static and cyclic loading. In particular, increased bentonite content and longer ageing times reduce the rate of pore pressure generation during cyclic loading. These findings have substantial practical value in reducing the liquefaction susceptibility of granular soils, which is important for the stability of building foundations and

host media for underground infrastructure during earthquakes and in response to other sources of dynamic loading.

The paper by Dr. El Mohtar and his first PhD student, Yoon and Mohtar (2013) *Clays and Clay Minerals* Vol. 61 No. 4 "Dynamic rheological properties of sodium pyrophosphate-modified bentonite suspensions for liquefaction mitigation" shows that the yield strength of bentonite suspensions is reduced by modification with sodium pyrophosphate, thus increasing bentonite penetration depth. Furthermore, the paper shows that the reduction in inter-aggregate bonds in bentonite grout from blending with sodium pyrophosphate is reversed with time, and increases during ageing of the bentonite, suppressing the generation of excess pore pressures in the sand during cyclic loading. These results again have significant practical value because they point to ways in which bentonite can be modified to achieve and optimize liquefaction suppression in granular soils.

I note that Dr. El Mohtar received an NSF Early Career Development Award (2012) and the ASCE Arthur Casagrande Professional Development Award (2014). Both awards show high regard from Dr. El Mohtar's academic and professional peers for the quality of his research. The Casagrande Award is given to outstanding young (< 35 years old) geotechnical researchers, teachers, and practitioners, and is considered a harbinger for a successful academic career.

The original and innovative contributions by Dr. El Mohtar in his field are the development of fundamental understanding of pore fluid and suspension effects on the mechanical and hydraulic characteristics of soils, and the attendant development and application of advanced laboratory techniques to measure pore fluid rheological and pore fluid-soil micro-mechanical properties. His work in this area has established him as one of the leading researchers in this field. His research findings are stimulating additional investigations for field implementation of liquefaction remediation.

I think that Dr. El Mohtar's development to date is consistent with the highest quality academics in his cohort at research-intensive universities. He shows substantial promise for professional growth and leadership.

Based on my knowledge of his work and my review of the materials sent to me, I recommend him strongly for advancement to tenure and Associate Professor.

Best Regards,

A handwritten signature in black ink, reading "T.D. O'Rourke". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

T.D. O'Rourke
Thomas R. Briggs Professor of Engineering
School of Civil and Environmental Engineering

Peoples, Hortensia D

From: Thomas Denis O'Rourke <tdo1@cornell.edu>
Sent: Sunday, July 06, 2014 11:42 AM
To: Peoples, Hortensia D
Subject: RE: On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar
Attachments: El Mohtar UT LOR 6 July 14.zip

Importance: High

Hello Hortensia,

Attached please find my LOR for Dr. Chadi El Mohtar. Please confirm receipt by return e mail.

Best regards,

Tom O'Rourke

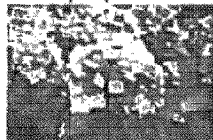
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From: Peoples, Hortensia D [<mailto:hpeoples@mail.utexas.edu>]
Sent: Thursday, June 12, 2014 10:56 AM
To: Thomas Denis O'Rourke
Subject: RE: On Behalf of Richard L. Corsi-- Letter of Reference for Dr. Chadi El Mohtar

Thank you. Have a nice day!

Hortensia

Hortensia Peoples
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The University of Texas at Austin
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From: Thomas Denis O'Rourke [<mailto:tdo1@cornell.edu>]
Sent: Thursday, June 12, 2014 9:32 AM

THOMAS D. O'ROURKE

Thomas R. Briggs Professor of Engineering
Civil and Environmental Engineering
Cornell University
273 Hollister Hall
Ithaca, NY 14853-3501

Education

Ph.D., University of Illinois at Urbana-Champaign, 1975
M.S.C.E., University of Illinois at Urbana-Champaign, 1973
B.S.C.E., Cornell University, 1970

Experience

Professor O'Rourke has been a member of the teaching and research staffs at Cornell University and the University of Illinois at Urbana-Champaign. His teaching and professional practice include geotechnical engineering for earth retention systems, foundations, and soil/structure interaction; earthquake engineering; underground construction technology, and engineering of large, geographically distributed systems such as water supplies, gas and liquid fuel systems, electric power, and transportation facilities. He has authored or co-authored over 350 publications on geotechnical, underground, earthquake engineering, and impact of extreme events on civil infrastructure.

He is an elected member of the US National Academy of Engineering (1993) and a Fellow of the American Association for the Advancement of Science (2000). He was elected a Distinguished Member of ASCE (2014), the Society's highest honor. He was awarded the C.A. Hogentogler Award from ASTM in 1976 for his work on the field monitoring of large construction projects. In 1983 and 1988, Prof. O'Rourke received the Collingwood and Huber Research Prize, respectively, from ASCE for his studies of soil and rock mechanics applied to underground works and excavation technologies. In 1995 he received the C. Martin Duke Award from ASCE for his contributions to lifeline earthquake engineering, and in 1997 he received the Stephen D. Bechtel Pipeline Engineering Award from ASCE for his contributions to pipeline engineering. In 2002 he received the Trevithick Prize from the British Institution of Civil Engineers and was designated as an NSF Distinguished Lecturer. He received the 2003 Japan Gas Association Best Paper Award and the 1996 EERI Outstanding Paper Award. In 2005 he received the Ralph B. Peck Award from ASCE. He gave the 2009 Rankine Lecture in London, UK, sponsored by the British Geotechnical Association. He was the 2012 EERI Distinguished Lecturer, and was elected to EERI Honorary Membership in 2013. He is the 2013 ASCE Geo-Institute Touring Lecturer. He is the first recipient of the 2014 ASCE LeVal Lund Award for Practicing Lifeline Risk Reduction. He received both the College of Engineering Distinguished Service Award (2005) and the CEE Distinguished Alumnus Award (2000) from the University of Illinois. In 1998 and 2003, Prof. O'Rourke received Cornell University's College of Engineering Daniel Lazar and Kenneth Goldman Excellence in Teaching Awards, respectively.

In 1998 he was elected to the Earthquake Engineering Research Institute (EERI) Board of Directors and served as President from 2003-2004. He testified before the US House of Representatives Science Committee in 1999 on engineering implications of the 1999 Turkey and Taiwan earthquakes and in both 2003 and 2009 on the reauthorization of the National Earthquake Hazards Reduction Program (NEHRP). He served on numerous earthquake reconnaissance missions, and is currently involved the recovery of Christchurch, NZ, from the Canterbury Earthquake Sequence. He was a member of the US National Academies Committee on New Orleans Regional Hurricane Protection Projects, and was a member of the National Institute for Science and Technology (NIST) Advisory Committee for Earthquake Hazards Reduction, which serves as the national advisory committee for NEHRP. He chairs the ATC Project Technical Committee to develop a Research and Implementation Roadmap for Earthquake Resilient Lifelines for NIST.

Professor O'Rourke has developed engineering solutions for problems concerning foundation performance, ground movement effects on structures, earth retaining structures, pipelines, earthquake engineering, tunneling, and infrastructure rehabilitation, both on a research and consulting basis. He has investigated and contributed to the mitigation of the effects of extreme events, including natural hazards and human threats, on civil infrastructure systems. He has developed techniques for evaluating ground movement patterns and stability for a variety of excavation, tunneling, micro-tunneling, and mining conditions. He has developed analytical methods and siting strategies to mitigate pipeline and tunnel damage during earthquakes, analyzed and designed high pressure pipelines, and has established full-scale testing facilities for underground facilities and pipelines. He has developed

geographical information systems and network analysis procedures for geographically distributed infrastructure systems in areas vulnerable to earthquakes and other natural disasters. He has assisted in the development and application of advanced polymer and composite materials for the in-situ rehabilitation of water supply and gas distribution systems.

He has served as chair or member of the consulting boards of many large underground construction projects, as well as the peer reviews for projects associated with highway, rapid transit, water supply, and energy distribution systems. Many of these projects have included seismic design assessments. Representative projects include the Third NYC Water Tunnel, Bypass Tunnel for NYC Delaware Aqueduct, tunnels and excavation for Cornell University Energy Recovery Linac, Boston CA/T, risk assessment for the First NYC Water Tunnel and NYC aqueducts, Tren Urbano Rapid Transit System, NYC Second Avenue Subway and Fulton St. Transit Center, soft and hard rock tunneling for the Massachusetts Water Resources Authority, Dulles Airport underground expansion, San Francisco Transbay Transportation Center, TJPA Downtown Extension Project involving hard and soft ground tunneling, seismic design of tunnels in Turkey, Trans-bay Tube Seismic Retrofit, seismic design for the San Francisco water supply (including the SFPUC Crystal Springs By-pass Tunnel, Bay Tunnel, Irvington Tunnel, and Bay Division Pipelines), the Silicon Valley Rapid Transit System in San Jose, CA, geotechnical and seismic criteria for the Alaskan Way Viaduct in Seattle, WA, and many others.

He is a member of the ASCE, ASME, ASTM, AAAS, ISSMEE, EERI, and IAEG. He was a member of the NSF Engineering Directorate Advisory Committee, and served on the Executive Committee of the Multidisciplinary Center for Earthquake Engineering Research. He was chair of the U.S. National Committee on Tunneling Technology and co-chair of the Institute for Civil Infrastructure Systems. He was a member of the NRC Geotechnical Board, Board on Energy and Environmental Systems, and Board on Water Science and Technology. He is a past chair of the UTRC Executive Committee and both the ASCE TCLEE Executive Committee and Technical Committee on Gas and Liquid Fuel Lifelines. He is a past chair of the ASCE Earth Retaining Structures Committee, as well as past president of the ASCE Ithaca Section, and was a member of the intermunicipal water commission in his home town.

He holds US Patents No. 5713393 for "frictionless pipe", Feb. 1998, and No. 8701469 for flexible substrate sensor system for environmental & infrastructure monitoring, Apr. 2014.